IBM became the father of virtualization
IBM has a long history with virtualization and it continues to influence the technology's development today. **Page 10.**

NETWORKWORLD CLEAR CHOICE

Sun storage server scores high on performance
Sun's iSCSI-based 7410 Unified Storage System handles 1Gbps throughput, but could improve on configuration and management features. **Page 28.**

NETWORKWORLD

Maximize your return on IT ■ www.networkworld.com May 4, 2009 ■ Volume 26, Number 17

IBM set to resell Brocade's Foundry switches
IBM will rebrand and sell Brocade's Foundry switches in an apparent swipe at Cisco. **Page 10.**

Cloud computing security: Who knew?
Columnist Scott Bradner hopes that Cloud Security Alliance and others can safeguard cloud networks. **Page 16.**

Watchdogs smack FCC over E-Rate
After 11 years, FCC program still lacks coherent, tangible goals, GAO contends. **Page 18.**

ITRoadmap

Upcoming ITR
One-day Network World IT event is coming to a city near you! The event features 10 IT tracks; vendor expo; peer case studies. Register at: **www.nwdocfinder.com/8728**

Is it time to cut back on now-idle Ethernet?

BY JOHN COX

A range of companies with wireless LANs are discovering that 50% to 90% or more of Ethernet ports go unused because Wi-Fi has become so prevalent.

They look at racks of unused switches, ports, Ethernet wall jacks, the cabling that connects them all, the yearly maintenance charges for unused switches, electrical charges and cooling costs. So why not formally drop what many users have already discarded — the Ethernet cable?

"There's definitely a right-sizing going on," says Michael King, research director, mobile and wireless,

See Wireless, page 12

Microsoft unifying cloud, net mgmt.

Concept hits chord, but development work needed

BY JOHN FONTANA

LAS VEGAS — Microsoft last week shared the latest on its ambitious cloud computing management plan, though customers and analysts say they still have plenty of questions on issues such as timing and security.

The company said at its annual Microsoft Management Summit (MMS) that its System Center family of server and desktop management tools will be a cornerstone of its software-plus-services strategy to meld internal networks with cloud-based resources. The intent is to manage both internal and hosted networks from a single set of tools.

At the conference, Microsoft dubbed those internal networks "private clouds," which are built to mimic the flexible characteristics of cloud infrastructure.

But while many of the core pieces for a private cloud are in place on corporate networks, some are not.

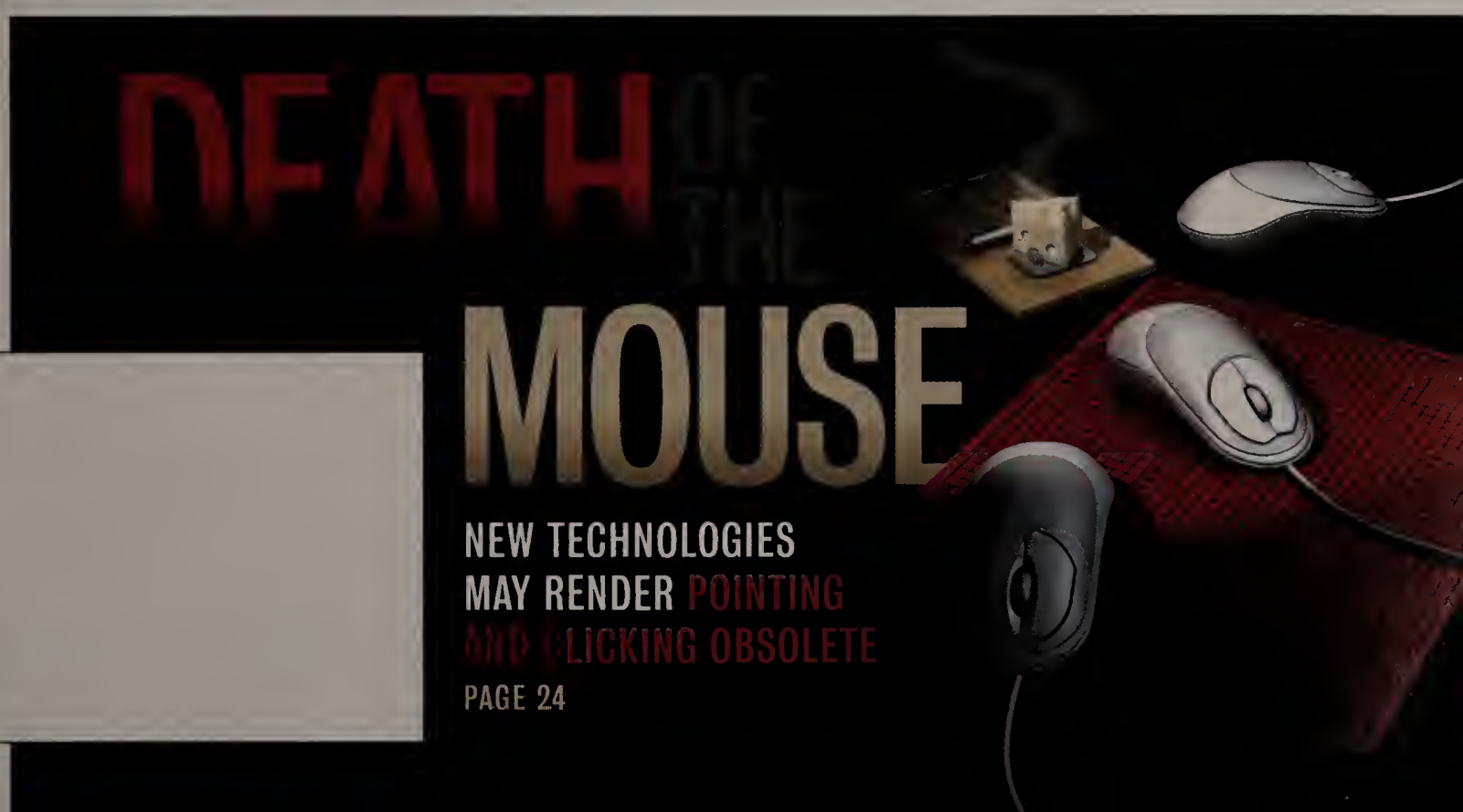
The other pieces of Microsoft's cloud strategy are virtualization, Active Directory and Forefront security tools, including the new Identity Manager (formerly Identity Lifecycle Manager).

"If you are on the road to virtualization, you are on the road to private cloud," said Bob Kelly, Microsoft's corporate vice president for infrastructure server marketing.

The rollout of virtualization is nowhere near critical mass among Microsoft users.

Tools for cross-platform management aren't slated to ship for another two months. The service desk software designed to integrate System Center tools

See Microsoft, page 31



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COOLTOOLS

■ **The Kaleido R7 digital photo frame lets you synchronize photos wirelessly from another computer on the same wireless network. See Cool Tools, page 22.**

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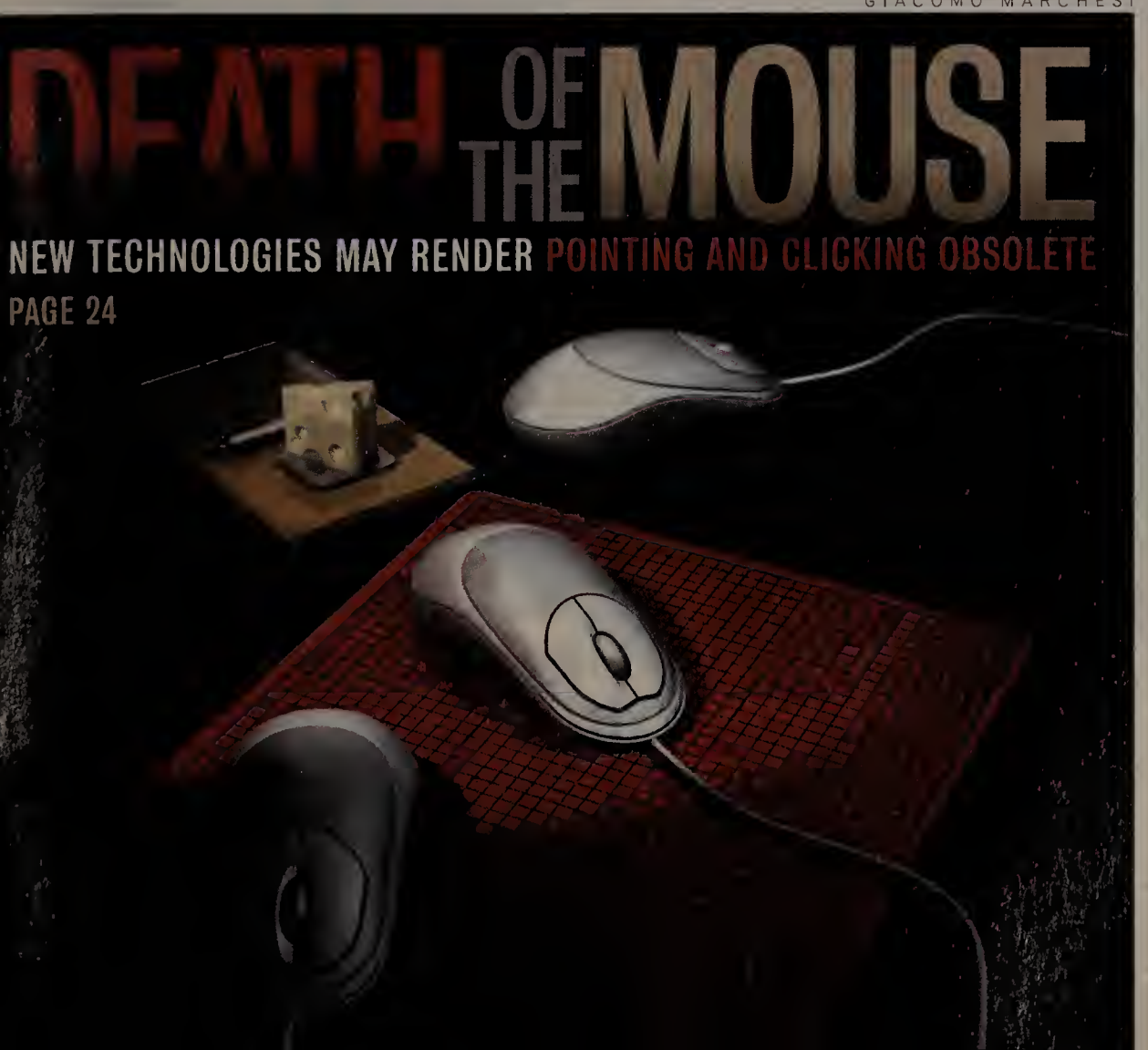
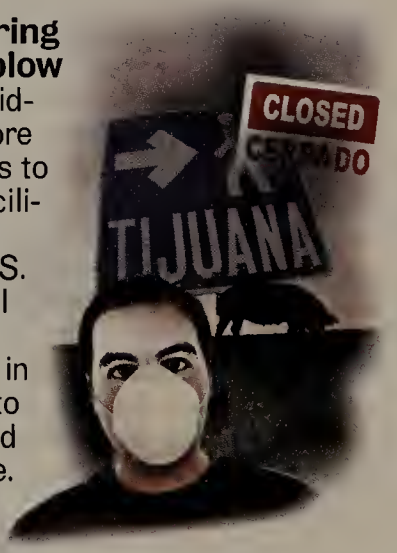


GOODBADUGLY

Flicker of hope among IT buyers

IT buyers say they plan to increase their investments in technology before the end of 2009, recent survey results show, as a noteworthy number of high-tech decision makers revealed they expect in the next six months to put more budget dollars into IT. More than 25% of 500 IT professionals polled by the nonprofit organization ISACA said they will be increasing their investments in IT this year. Nearly 30% of small businesses polled by CDW in March also expect budget increases before the end of 2009. And CDW found 18% of midsize companies expect to hire more staff over that same time. CDW polls approximately 1,000 or more IT decision makers periodically.

Mexican offshoring takes another blow



Mexico, once considered one of the more favorable countries to locate offshore facilities because of its proximity to the U.S. and lack of cultural barriers, has been falling out of favor in the past year due to border violence and drug-related crime. Now add swine flu to that list.

"A lot of businesses in Mexico are temporarily shut down, and IT services is a 24-7 business," says Gartner Research Vice President Frances Karamouzis. "The country also has travel restrictions in place now, which was one of the primary attractions around doing work in Mexico. This is happening even as Indian vendors are losing market share and establishing facilities elsewhere, Karamouzis says.

Four indicted in giant college spam operation

A federal grand jury in Missouri has indicted two brothers and two other people on charges related to an alleged e-mail spamming case that targeted more than 2,000 U.S. colleges and sold more than $4.1 million worth of products to students, the U.S. Department of Justice announced. "Nearly every college and university in the United States was impacted by this scheme," Matt Whitworth, acting U.S. attorney for the Western District of Missouri, said in a statement. "These schools spent significant funds to repair the damage and to implement costly preventive measures to defend themselves against future intrusions."

Security reward, punishment

Re:"Security Training 101" (www.nwdocfinder.com/9833):

This article on developing an awareness program designed for the particular culture of the organization is grossly deficient, but most people working in the information security field aren't aware of it, apparently including those experts quoted in the article. They must understand that everybody in positions of trust hates the constraints imposed by information security controls that interfere with the performance of their work. They hate learning and using passwords, being restricted from access to certain information, locking computers and doors, reporting suspicious events, segregating their duties. That is why information security must be made a part of job performance rather than being in conflict with it.

People in positions of trust must be given the carrot and the stick and be rewarded for exemplary security and punished for poor security before any awareness program is going to be effective no matter what the culture of the organization.

By the way, your side bar on "Top mistakes users make" is wrong in stating the No. 1 mistake is writing down passwords. Users should be encouraged to write down their many passwords and keep them in a safe place such as a wallet or purse where they keep their credit cards. This facilitates choosing strong passwords. If people must use more than two passwords, they are going to write them down someplace anyway no matter how much awareness training you give them.

Donn Parker
CISSP (retired)

Sun will benefit from Oracle leadership

Re: The downfall of Sun Microsystems (www.nwdocfinder.com/9832):

It's clear that Oracle is driven to succeed, their history and leadership offer continuous evidence of that. Looking from the outside as a competitor: They are a very well managed company, taking as much of the revenue of any contract or sale as they possibly can. In business, a true predator.

Sun has been an engineering company first and foremost, innovation and engineering brilliance are what make Sun stand out among the surviving computer companies. It has not been well managed for a long time.

Sun had so much engineering and product DNA that Oracle can easily manage these pieces for many years to come, reaping profit off of what Sun itself failed to monetize to the scope of where Oracle will surely take it.

Vic W.

Netbooks can be a perfect fit

Re: Netbooks are all the rage, but does anyone have one? (www.nwdocfinder.com/9834):

I had a 15-inch laptop for four years, and it never left my home office. Last year I built a quad core PC in the spring, and in the fall I bought a 9-inch Acer Aspire one with a 160GB hard drive. My PC never leaves my office, but my netbook goes anywhere I want it to. It fits in a bag the size of a purse, and it is more powerful than my old laptop. I have Open Office on it, I surf the Web, and it even runs PhotoShop 7 quite well. This is the portable device that I had been waiting for after using a Palm TX and a Palm smartphone, which have very small screens. While netbooks are not for everybody, they are perfect for what I need.

Omegan

IT innovation fuels job security

Re: IT job security plummets five times faster than nationwide average (www.nwdocfinder.com/9835):

Innovation drives the need for more IT jobs. When was the last truly innovative IT technology? In the '90s the Internet went from the lab to businesses and homes. There was a big boom in IT jobs. Lately, just more of the same. How much has Vista changed your company? How about those cool new Air Macs? Has a dual core or quad core processor let you do something you couldn't do before? Just more of the same. If there is nothing new, businesses will just look to cut costs.

Anon

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 492 Old Connecticut Path, Framingham, MA 01701-9002. Please include phone number and address for verification.

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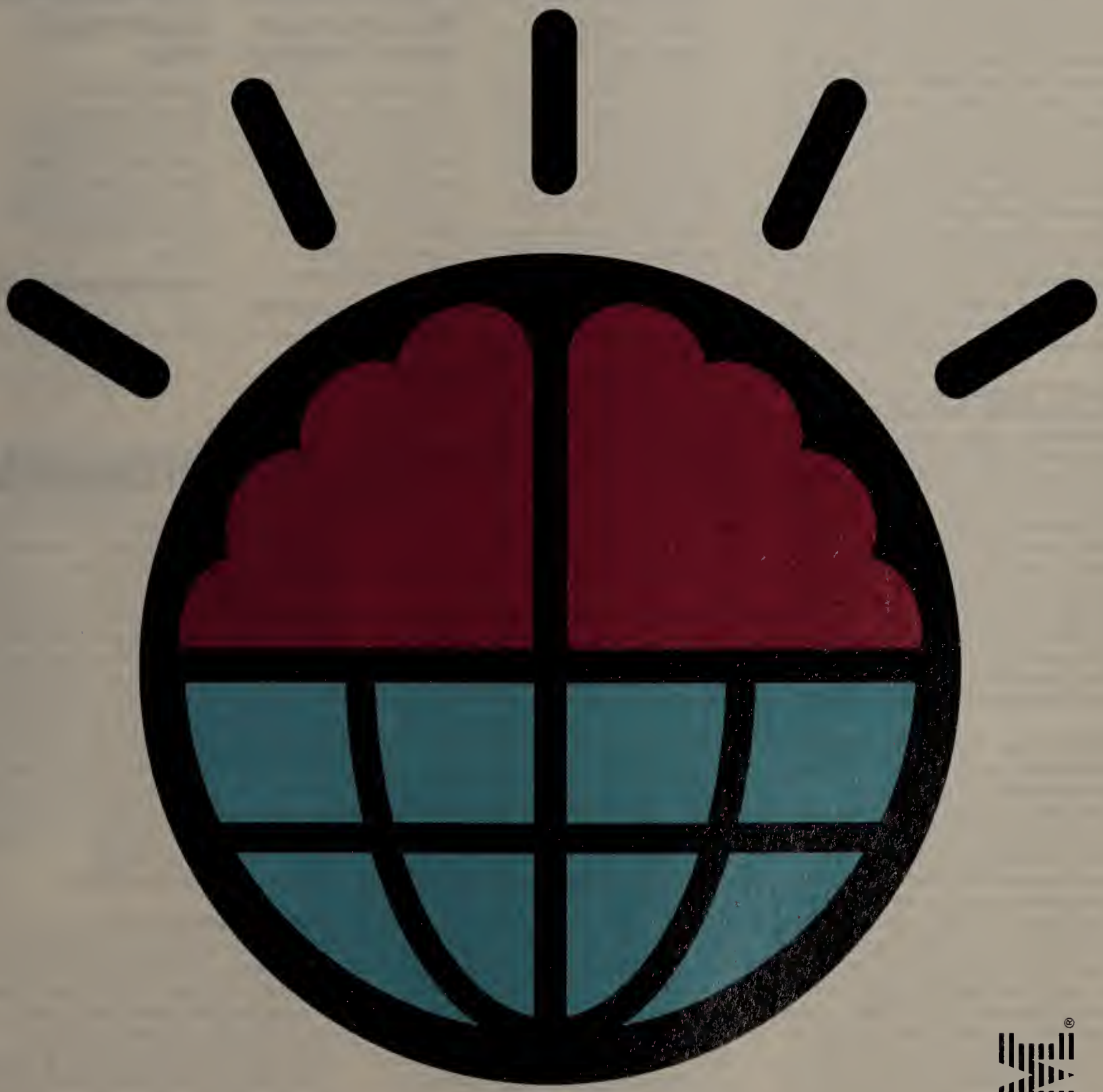

THINK IBM

BLOGOSPHERE

What kind of data center can you build with $500 million? Layer 8 asks if the government gave your company $500 million to spend on building a new data center, what would you buy and how would you build it? Well, the Social Security Administration is about to find out. As part of the stimulus bill, or the American Recovery and Reinvestment Act of 2009, the SSA got the tidy little sum to replace its National Computer Center. The SSA says it will need closer to $800 million to fund a new IT infrastructure, including the new data center — the physical building, power and cooling infrastructure, IT hardware, and systems applications. (This is addition to a $72 million backup facility currently under construction in Durham, N.C.). The current data center is 30 years old and supports the backbone of the agency's automated operations, which are the lifeblood to sorting out the earnings and benefits worth some $680 billion for almost 55 million Americans. **www.nwdocfinder.com/9829**

New HP Networking boss took $17.2 million from EMC, but sues to void his non-compete agreement. Cisco Subnet blogger Brad Reese points out *The Boston Globe*'s report that new HP Networking boss David Donatelli (executive vice president of HP's Enterprise Servers, Storage and Networking) is suing his former employer EMC in California state court seeking to void his non-compete agreement. After paying Donatelli more than $17.2 million over the last three years, it should be no surprise that EMC has sued in Massachusetts state court to have Donatelli's non-compete agreement enforced. **www.nwdocfinder.com/9830**

VMware vs. Google in the cloud. Google Subnet says now that VMware has launched Vsphere, its cloud computing OS, the virtualization company is beginning to rub Google the wrong way. Seems VMware is pushing virtualization as the one and only fail-proof approach to cloud computing and Google doesn't agree. The argument centers on this: What's the best way to approach cloud computing, in a private data center via hardware virtualization ala VMware or in a public cloud via Google's software-is-king approach? VMware CEO Paul Maritz, speaking at VMWorld Europe in February, said virtualization is really the only viable enterprise-ready technology for cloud computing. To that, Google's response is simply "nonsense." Google has achieved far greater economies of scale, reliability and performance simply by harnessing low-cost computers with great software — all without virtualization. **www.nwdocfinder.com/9831**

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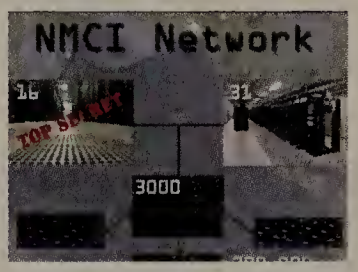

Server virtualization road trip

The Navy Marine Corps Intranet deployed server virtualization to consolidate more than 300,000 servers, saving the military more than $800,000 in power costs and freeing up physical space.
www.nwdocfinder.com/9825

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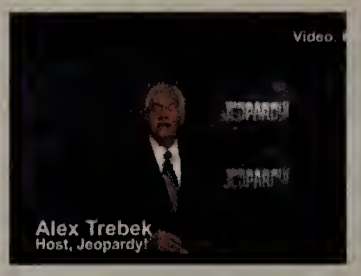

IBM supercomputer takes on "Jeopardy"!

What is Watson? That's the name of the advanced computer system IBM unveiled last week that producers of the long running TV game show "Jeopardy" plan to pit against human contestants.
www.nwdocfinder.com/9826

IDG NEWS WIRE:

Speaker made of paper

Researchers at Taiwan's Industrial Technology Research Institute have developed a speaker that's made of paper and can be gently bent and rolled.
www.nwdocfinder.com/9827

BEST OF NWW'S

NEWSLETTERS

The first 10 rules of Twittiquette

Web applications: Some time ago a friend asked me (on Twitter) what I thought the rules of etiquette were for Twitter. I said I'd have to think about it and, having done so, here are my first 10 rules of Twittiquette:
1. Don't tell us what you had for breakfast. Really. Or for that matter tell us what you're planning to eat for lunch. Or what the weather is like wherever the hell you are. We really, really don't care. If your mom is following you then OK, she might care but as far as the rest of us are concerned, we care not at all.
2. If someone retweets one of your Twitter messages (usually signified by an "RT") it is good form to thank them, preferably privately via a direct message. If they aren't following you then a public thank you is fine (and doesn't hurt your reputation)....
www.nwdocfinder.com/9821

Tech exec: Are you reasonably confident that your users have the appropriate rights to access the applications, files and data they need to do their jobs? By "appropriate rights" I mean the ability to access the resources necessary to fulfill a particular job function or business role, and nothing over and above that. If you're a bit hesitant in answering "yes," then you aren't alone. Last year, the Ponemon Institute published the results of its independent 2008 National Survey on Access Governance. Sponsored by Aveksa, the survey gathered information from almost 700 experienced IT practitioners from U.S. business and governmental organizations. More than half of the respondents can't say with confidence that the process of assigning access rights is well managed and tightly controlled within their organizations. That means there are a lot of application or data owners and caretakers that believe their business data can be accessed by people who probably shouldn't have access at all. This presents a number of risks for organizations, including the potential loss, theft or compromise of sensitive data, as well as non-compliance with company policies and government and industry regulations like HIPAA, PCI DSS and SOX.
www.nwdocfinder.com/9822

Network optimization: There are more than 1.1 million Web sites designed for mobile users, according to research from dotMobi. To help users find the cream of the crop, dotMobi got together with Gomez to create a benchmark that tests and ranks the mobile Web experience provided by top businesses in airline, banking and search. "Helping consumers better understand which of those sites will offer them a good experience — no matter what handset or operator they're using — will help increase the use of the mobile Web," said Trey Harvin, CEO of dotMobi.
www.nwdocfinder.com/9823

U.S. retailers lose $40 billion annually
due to inefficient supply chain processes.
A smarter planet needs smarter IT.
Let's build a smarter planet.
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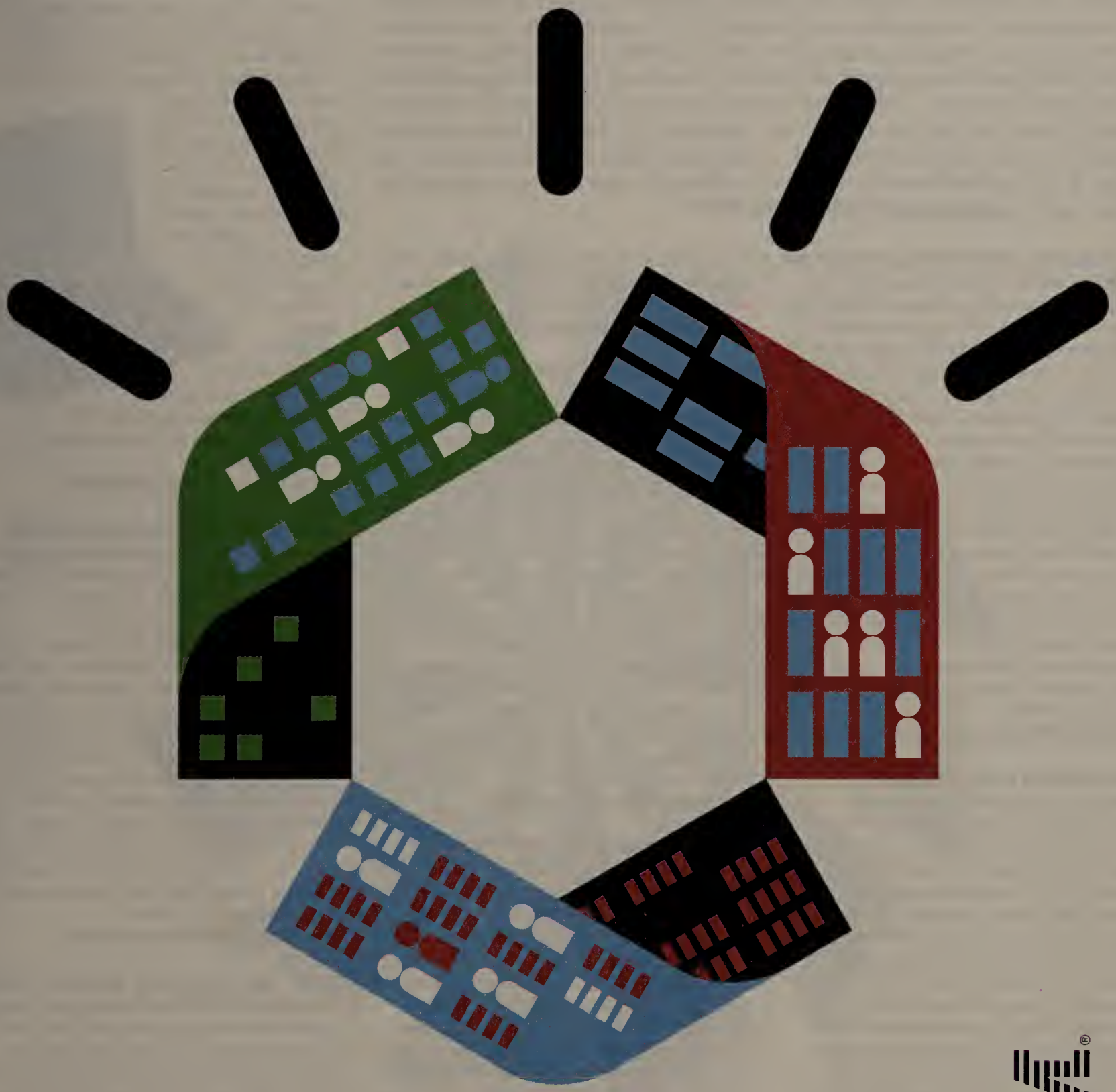


THINK

Agency tightens IPv4 address procedure

The organization that assigns Internet addresses in the United States plans to raise the bar for getting them as the supply of IPv4 addresses nears exhaustion, raising the specter of aggressive speculation on a soon-to-be-rare resource. The American Registry for Internet Numbers has sent a letter to users of IPv4 addresses warning them that it expects IPv4 addresses to run out within the next two years. Beginning as early as May 18, ARIN will require applications for IPv4 addresses to include an "attestation of accuracy from an organizational officer," ARIN Chairman John Curran wrote in a letter dated April 15. ARIN said it would take this step "to ensure the legitimacy of all IPv4 address space requests" so those organizations with a legitimate need for address space can still get it. Also in the letter, ARIN advised address holders to begin planning for IPv6 adoption. **www.nwdocfinder.com/9837**

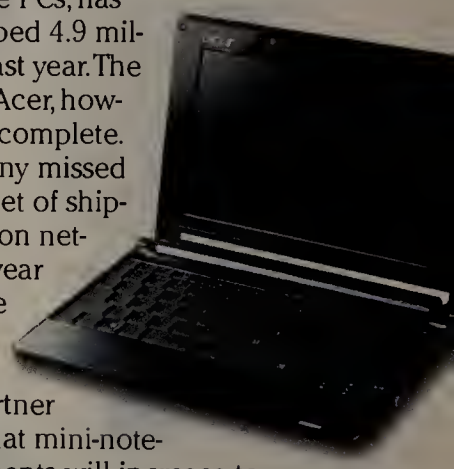
Intel releases power management tool for data centers. Intel has announced Data Center Manager, a software tool kit that can reduce the power drawn by servers in data centers by tapping into hardware resources. The development kit lets companies build software to manage or cap power consumption by individual servers or a group of servers. Power consumption is provisioned by DCM through communication with Intel's Intelligent Power Node Manager software tool installed on the chipset of each server. The middleware instructs Node Manager to set power limits for servers based on the level of activity. For example, DCM can cap power consumption on inactive servers while raising the power bar on active servers. The tool is designed for use on servers running Intel's Xeon 5500 chips, which include motherboards with the Node Manager software.
www.nwdocfinder.com/9838

Obama makes FCC nomination. President Obama plans to nominate Mignon Clyburn, a member of the Public Service Commission of South Carolina, to fill a seat on the Federal Communications Commission. Clyburn has served on South Carolina's PSC, which regulates the state's public utilities including telecommunications, since 1998. She also is the chairwoman of the Washington Action Committee of the National Association of Regulatory Utility Commissioners. If confirmed, she'll replace Jonathan Adelstein and likely be the final Democrat on the board. The five-member commission can't include more than three members of one party. Obama has already nominated Julius Genachowski to be the FCC's chairman. If Clyburn and Genachowski are confirmed, they'll join Democrat Michael Copps, who continues to serve his term. Republican Robert McDowell also remains on the commission, and there is an additional seat for another member of his party.
www.nwdocfinder.com/9839

Google Apps gains LDAP support. Google Apps has gained a directory tool designed to simplify and accelerate the setup of this hosted collaboration and communication suite. With the new Directory Sync, Apps can tap into existing Lightweight Directory Access Protocol-based user directories so that administrators don't have to set up a separate directory in the Google suite. This functionality will likely appeal to a segment of the collaboration market that Google is very interested in attracting: enterprise IT departments. The tool, which comes from technology Google acquired when it bought Postini, runs behind customers' firewalls and offers a one-way delivery of directory information to Google Apps. It's available at no additional cost for administrators of the Premier, Education and Partner versions of Apps.
www.nwdocfinder.com/9840

Sun's revenue drops 20% ahead of Oracle buy. Sun reported a sharp drop in revenue for its third fiscal quarter, as the company battled uncertainty about its future along with the global recession. Sun's revenue for the quarter was $2.61 billion, down 20% from a year earlier and below the $2.86 billion that financial analysts had been expecting. Sales of Sun's x86 servers, which had been a growing area for the company, declined for the first time. Its net loss was $201 million (including a restructuring charge of $46 million, related mostly to the 5,000 to 6,000 layoffs that Sun announced in November). "There were few product categories that had any success this past quarter," says Gartner analyst George Weiss. He attributes the poor results to the economy, the uncertainty caused by the acquisition, and competitors taking advantage of the uncertainty to target Sun customers.
www.nwdocfinder.com/9841

Acer beat Asus in '08 netbook shipments. Acer edged out rival Asustek Computer to lead the world in netbook shipments last year. The world's third largest computer vendor shipped just more than 5 million netbooks last year, according to Gianfranco Lanci, Acer's president and CEO. The company expects to ship 10 million to 12 million netbooks this year, he added. Asustek, which pioneered netbooks with its popular Eee PCs, has said it shipped 4.9 million units last year. The victory for Acer, however, was incomplete. The company missed its own target of shipping 6 million netbooks last year because the global economy soured. Gartner estimates that mini-notebook shipments will increase to 20.2 million units this year, up from 11.7 million units last year.



www.nwdocfinder.com/9842

Feds to ramp up cloud computing investments. Government agencies are moving slower on cloud computing than the IT industry as a whole, but federal government spending on the cloud will nearly triple by 2013, according to market research firm INPUT. "The convergence of tight budgets, aggressive market players and increasing acceptance of the cloud computing model will fuel an uptick in demand for cloud computing," INPUT states in a new report. Federal government use of cloud computing services added up to $277 million in 2008, and will increase steadily until reaching $792 million in 2013, the firm predicts. The 2013 figure will still represent less than 1% of total forecasted government IT spending of $87.8 billion.
www.nwdocfinder.com/9843

Start-up Axxana ties disaster-recovery gear to EMC software. Storage start-up Axxana has begun shipping its "black box" for disaster recovery and integrated the system with EMC's RecoverPoint software, which performs remote replication. Axxana stores data on flash memory in a 400-pound black box — known as the Phoenix System — designed to survive terrorist attacks and natural disasters, and transmits data wirelessly during such an event.
www.nwdocfinder.com/9844

IBM retaliating against Cisco?

BY JIM DUFFY

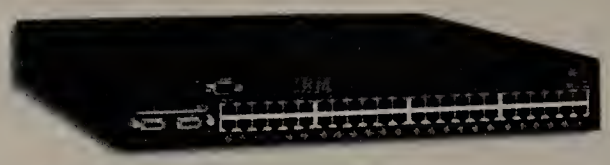
Brocade has extended an OEM relationship with IBM to include its recently acquired Foundry switches in a deal that appears to be in retaliation to Cisco's recent entry into the blade server market.

IBM will rebrand and sell Brocade's Foundry switches through its global sales force and authorized business partners. The switches include:

- NetIron MLX series, to be rebranded IBM m-series Ethernet routers.
- NetIron CES 2000 series, to be rebranded IBM c-series Ethernet switches.
- FastIron SuperX line, to be rebranded IBM s-series Ethernet switches.
- FastIron GS series, to be rebranded IBM g-series Ethernet switches.

The amended OEM agreement, announced this week, extends the existing relationship between Brocade and IBM in the SAN market. That arrangement has been in place for more than 10 years, according to Brocade, and includes the multi-protocol Brocade DCX Backbone along with Fibre Channel directors, stand-alone and embedded switches, and related software.

Meanwhile, IBM has been selling networking equipment from Cisco for just as long, and recently began selling LAN switches from Juniper Networks. The Brocade extension is viewed by some as an IBM countermeasure to Cisco's entry into the data center blade server market, which has been a stronghold of IBM's for decades.



IBM will resell Foundry switches as its Switch –m and Router-s, which among other features will support Layer 2, base Layer 3 options with flexibility to upgrade to Full IPv4 Layer 3.

Cisco's decision to develop its own blade servers may have angered IBM, HP and others in that market. As a result, server vendors are aligning themselves with Cisco competitors in the networking space.

Some believe Cisco won't feel the impact of the IBM/Brocade deal. Others see this as more than a response to Cisco entering the blade server market.

"This is less of a response to Cisco and more of a reaction to the need and use of Ethernet in the storage environment," says Abner Germanow, an analyst at IDC. IBM is looking at all the various vendors of Ethernet and picking out the best of what all of those companies have to offer. They're not putting all of their eggs into one basket."

Or two: IBM says the Cisco and Juniper resale arrangements will continue despite the extended deal with Brocade.

"Juniper and Cisco are key IBM networking partners and we will continue to resell their products," an IBM spokesman stated in an e-mail. "The expansion of the Brocade agreement is about providing additional choice to IBM's customers."

Juniper also says it is business as usual with IBM. IBM resells Juniper's EX line of LAN switches, which debuted 13 months ago.

"The relationship with IBM is very strong," says Hitesh Sheth, executive vice president and general manager of Juniper's Ethernet Platforms business group. "The resale arrangement is going to remain in place and we will continue to strengthen the relationship we already have with IBM. We have to separate what may be tactical stuff going on vs. strategic."

IBM expects to make these products available in May. ■

Today's VMs learn from mainframes

BY JON BRODKIN

Few people are more aware of the long history of virtualization than Jim Rymarczyk, who joined IBM as a programmer in the 1960s just as the mainframe giant was inventing the technology that today is reshaping the IT industry.

Rymarczyk, still at Big Blue today as an IBM fellow and chief virtualization technologist, recalls using CP-67 software, one of IBM's first attempts at virtualizing mainframe operating systems. CP-67 and its follow-ups launched the virtualization market, giving customers the ability to greatly increase hardware utilization by running many applications at once. The partitioning concepts IBM developed for the mainframe served as inspiration for VMware, which brought virtualization to x86 servers in 1999.

"Back in the mid-60s, everyone was using key punches and submitting batch jobs," Rymarczyk says. "It was very inefficient and machines were quite expensive."

The problem of implementing a time-sharing system that would let multiple users access the same computer simultaneously was not an easy one to solve. Most engineers were taking traditional batch operating systems and making them more interactive to let multiple users come into the system, but the operating system itself became extremely complex, Rymarczyk explains. IBM's engineering team in Cambridge, Mass., came up with a novel approach that gave each user a virtual machine (VM), with an operating system that doesn't have to be complex because it only has to support one user, he says.

The first stake in the ground was CP-40, an operating system for the System/360 mainframe that IBM's Robert Creasy and Les Comeau started developing in 1964 to create VMs within the mainframe. It was quickly replaced by CP-67, the second version of IBM's hypervisor, which Rymarczyk began using upon joining IBM's Cambridge operations in 1968. The early hypervisor gave each mainframe user what was called a conversational monitor system (CSM), essentially a single-user operating system. The hypervisor provided the resources while the CMS supported the time-sharing capabilities. CP-67 enabled memory sharing across VMs while giving users their own virtual memory space.

Rymarczyk says he got to know several of the CP-67 developers and describes himself as one of their "guinea pigs." But even in these early days of virtualization, the technology's benefits were clear.

"What was most impressive was how well it worked and how powerful it was," Rymarczyk says. "It let you provide test platforms for software testing and development so that now all of that activity could be done so much more efficiently. It could be interactive too. You could be running a test operating system. When it failed you could look in virtual memory at exactly what was happening. It made debugging and testing much more effective."

IBM's first hypervisors were used internally and made available publicly in a quasi-open source model. Virtualization was "an internal research project, experimental engineering and design," Rymarczyk says. "It wasn't originally planned as a product."

The hypervisor did become a commercially available product in 1972 with VM technology for the mainframe. But it was an important technology even before its commercial release, Rymarczyk says.

"In the late 1960s it very quickly became a critical piece of IT technology," he says. "People were using it heavily to do interactive computing, to develop programs. It was a more productive way to do it, rather than submit batch jobs."

When Rymarczyk joined IBM on a full-time basis he was working on an experimental time-sharing system, a separate project that was

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for Gartner. "By 2011, 70% of all net new ports will be wireless. People are saying, 'we don't need to be spending so much on a wired infrastructure if no one is using it.'"

Many of these issues were predicted in fall 2007 by Burton Group Analyst Paul DeBeasi, in a report titled "The end of Ethernet?" In it, he argued that the demand for mobility and the advent of 802.11n networks with shared throughput of 150M to 180Mbps would lead enterprises to cut the Ethernet access cord.

"We're struggling a bit to wrap our heads around what amounts to a pretty significant change in culture," says the lead wireless technologist for a big East Coast university, who requested anonymity. Cisco is the wired and wireless network vendor. Like many other schools, this one has a wired port for every student bed, and 80% to 90% of these ports are idle. "Many students are clueless about what to do with a patch cord to begin with. They grew up with wireless," he says. "So how do we react to the change, without shooting ourselves in the foot?"

More companies are debating that very question, as they face replacing older switching gear, or deciding on the switching infrastructure for new buildings. And there is no clear or simple answer.

Many are unconvinced that enterprise Wi-Fi networks, even the high-throughput draft 802.11n flavor, can offer the reliability, security, and bandwidth demanded by current applications. Others are equally convinced that they can. Some insist that future IP-based television services require a wire; others are not so sure and wonder if IPTV justifies having hundreds of idle switches on yearly maintenance contracts, which can run hundreds of dollars per box.

"It depends on the application," says Dave Dully, CTO, Baptist Health of Northeast Florida, a network of five hospitals, with Cisco as the wired and wireless vendor. The WLAN supports several applications to facilitate clinical workflow and a separate visitors' network. "But if you talk about 24/7 applications and critical access, everything from security to guaranteed access in a power outage…we're still building robust wired networks for that," he says.

"The question is: when can you consider wireless the primary network?" asks John Turner, Director for Networks and Systems, Brandeis University, Waltham, Mass., and an Aruba Networks WLAN site. Facing a tough cabling challenge in a new campus science building, Turner concluded that a mix of 802.11abg and 802.11n access points, with new Aruba software for optimizing radio signals, would adequately support most user access. The building was completed with less cabling and fewer switches than originally planned.

Looking ahead to a looming switch upgrade, Turner is rethinking conventional assumptions. "If I converge the wired and wireless edge technologies, reduce the edge port count, disconnect jacks on the wall, and potentially use some of the older switches for spares, we think we're going to see a $1 million to $1.4 million in savings," he says.

Does it make sense to move to wireless?

The growing use of wall-to-wall 802.11 wireless LANs, coupled with the growth of enterprise laptops, means that expensive switch ports are going unused, in some cases 50% to 90% of them. Here's how you can start getting your arms around this issue:

- What percentage of users have wireless laptops, and how many more will have them in the next 12 to 18 months? What percentage use another type of Wi-Fi client, such as dual-mode smartphone?
- What kinds of applications are they using, and what are the bandwidth requirements?
- Do a port audit to find how many switch ports are in use, and how much they're used: a manual inspection can give you rough idea of in-use ports; a network monitoring program like StatSeeker can give you many more details.
- Tally up the yearly maintenance fees for your access switches.
- Look at your hardware depreciation schedule: what are your yearly costs to replace or upgrade these boxes?
- Check the spec sheets for power consumption for the switch models. Ask your vendor to help calculate a yearly total and check your utility company for rate information to approximate electrical costs. Allocating HVAC costs for big switches that require cooling might be more of a challenge.

Can you afford Ethernet access for your users?

Analyzing port usage

The percentage of unused ports, or the level of activity on ports, varies widely with the nature of the company's business, or even within a company. Many IT managers are only now taking audits. "I don't think everyone is aware of what's happening 'on the ground,'" says Philippe Hanset, IT manager, University of Tennessee, Knoxville, which has a campus-wide Aruba WLAN. "If ports are not being used, can I then change my distribution layer, to save on energy, and on support [costs] for all these switches?"

Workers at an insurance company might spend nearly all of their day at their desk. So would the staff of a company's call center department. But where a premium is put on mobility and convenience, the WLAN impact on port use is dramatic.

California State University, a federation of 23 universities, did a port-by-port analysis of Ethernet use in preparing a rollout of Aruba 802.11abg (upgradeable to 802.11n) WLANs on all campuses. IT directors insisted that the chancellor's office was vastly underestimating the growth in Ethernet ports. Using a network monitoring program called StatSeeker, Michel Davidoff, CalState's director of cyberinfrastructure services, recorded port use over a period of months. In no case were more than 50% of the ports being used, and in most cases it was far less, he reports.

"We knew there were some extra ports available, but this was mind-boggling," Davidoff says. His careful calculations, vetted by CalState math professors, showed that by reducing Ethernet ports to reflect usage, eliminating 2,500 switches, CalState would save over five years about $30 million in hardware spending, staging and installation costs. That doesn't count savings in electricity and heating.

Those savings are about two times the cost of the WLAN rollout for the entire CalState system.

A recent switch analysis at St. Bonaventure University near Buffalo, N.Y., another Cisco site, found that 92% of the ports on the wired Ethernet are unused by the school's 2,600 students, who rely on the 802.11abg WLAN. "It makes us question the economic viability of this [wired] service," says Brian Kellogg, the school's network services manager.

Can WLANS deliver?

There is debate over whether WLANs, including the high-throughput 802.11n networks, will be able to deliver enough bandwidth.

"Most user applications, whether mobile or fixed, remain transaction-oriented and fit well within a 1Mbps per user bandwidth [requirement], such as e-mail, Web surfing, file transfer and database access," says Brad Noblet, a former IT executive and now a Lebanon, N.H., consultant who specializes in wireless networking. "Even for real-time, latency-sensitive traffic such as voice and video, compression techniques like MP4 coupled with smart buffering techniques have enabled an excellent user experience while constraining traffic

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phased out in favor of the CP-67 code base. CP-67 was more flexible and efficient in terms of deploying VMs for all kinds of development scenarios, and for consolidating physical hardware, he says.

While Rymarczyk didn't invent virtualization, he has played a key role in advancing the technology over the past four decades. A graduate of Massachusetts Institute of Technology in electrical engineering and computer science, Rymarczyk worked for IBM in Cambridge until 1974, when he transferred to the Poughkeepsie, N.Y., lab, where he stayed for two decades.

In the early 1990s, Rymarczyk helped develop Parallel Sysplex, an IBM technology that lets customers build clusters of as many as 32 mainframe systems to share workloads and ensure high availability. He was also one of the lead designers of Processor Resource/System Manager, which let users logically slice a single processor into multiple partitions.

In 1994, Rymarczyk transferred to IBM's lab in Austin, Texas, as part of an effort to bring mainframe technology and expertise to IBM Power systems. This helped spur the creation of a hypervisor for IBM's Power-based servers in 1999. Rymarczyk is still based in Austin, and has no plans to leave IBM.

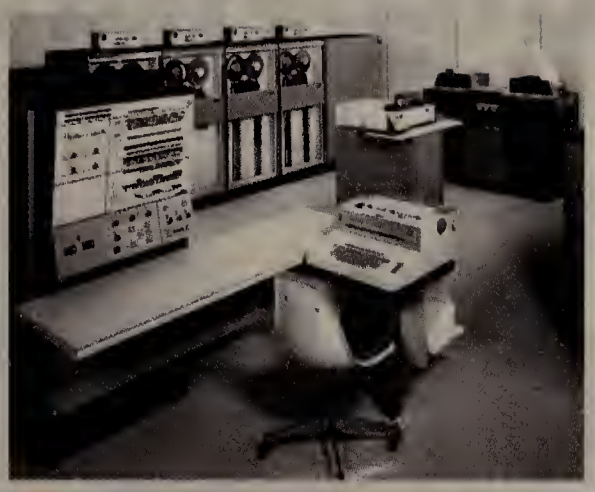
As chief virtualization technologist, "my main focus now is looking at the bigger picture of IT complexity and cost, and how we can leverage virtualization as well as other technologies to get cost and complexity under control," he says. "We just can't afford to keep doing IT the way we do it today."

Rymarczyk watched with interest as VMware adapted the concepts behind IBM's virtualization technology to x86 systems. In some ways, VMware's task was more difficult than IBM's because the Intel and AMD x86 processors used in most corporate data centers were not built with virtualization in mind. With the mainframe, IBM has total control over both the hardware and virtualization software, but VMware had to overcome the idiosyncrasies of x86 hardware developed by other vendors.

Like IBM, "VMware is creating a virtual machine for every user. But they started before there was any hardware assist. It turns out the x86 architecture has some nasty characteristics," Rymarczyk says. To run Windows in a VM on an x86 platform, VMware had to intercept and replace "difficult" instructions, he says.

"The x86 architecture had some things that computer scientists would really frown upon," he says. "Intel now has put in some hardware features to make it easier."

While there was a clear need for virtualization on the mainframe in the 1960s, the idea of building hypervisors for new platforms was "effectively abandoned during the 1980s and 1990s when client-server applications and inexpensive x86 servers and desktops led to distributed computing," according to a short history of virtualization written by VMware.



One of the earliest virtualization systems was developed on this IBM System/360 Model 40.

In the 1980s and early 1990s, x86 servers lacked the horsepower to run multiple operating systems, and they were so inexpensive that enterprises would deploy dedicated hardware for each application without a second thought, Rymarczyk says. But chip performance has increased so dramatically that the typical Windows machine needs less than 10% of the processing power actually delivered by a server today, he says.

That's one of the reasons x86 virtualization has become so important, but it still lags significantly behind the technology available on IBM's mainframes and Power systems, in Rymarczyk's opinion. One reason is that with mainframes and Power servers, virtualization isn't an optional add-on — it's part of the system's firmware. "It's sort of routine for customers on our Power servers to be running 40 or 50 virtual machines or LPARs [logical partitions] concurrently, and many of these virtual machines may be mission critical," he says.

Rymarczyk says tomorrow's data center "needs robust I/O virtualization." But he does credit VMware with being the first to introduce live migration, the ability to move a VM from one physical host to another without suffering downtime.

While IBM is a major producer of x86 servers, Big Blue has no plans to develop its own x86 hypervisor. But IBM is trying to position itself as one of the leaders in using virtualization technology to make tomorrow's data center more scalable and efficient.

"You're going to see the hypervisor on x86 essentially become free and there will be multiple choices," Rymarczyk says. "Open source, VMware, Microsoft, maybe even something from Intel that comes with the platform. There's little reason [for IBM] to invest in trying to make money by building a better [x86] hypervisor. Where the real opportunity exists in adding value for data centers is much higher up the stack."

Rymarczyk is working with IBM's Tivoli software team to develop architectures that will lead to more dynamic data centers.

"Today's data center tends to be ad hoc and rigid, with lots of constraints," he says. ■

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to as little as 1Mbps."

That's the case at St. Bonaventure. "The vast majority of students find that 11g [with about 20M to 25Mbps throughput] is fine for everything they're looking to do," Kellogg says.

The school's 10/100Mbps Ethernet plant is nearly 10 years old, and Kellogg estimates it will cost about $250,000 to upgrade it. He's in the midst of surveying students about their WLAN experience. If that's positive, with minimal problems, it will add weight to restructuring the network edge.

Aruba Networks has an entire outreach program, dubbed "rightsizing," built around these claimed financial benefits. Chris Harget, head of enterprise marketing, has been the point person for the effort, which includes a calculator, in glossy cardstock, that lets you spin several wheels to see projected savings, and an Excel spreadsheet that Aruba makes available to customers. The tools, and the entire marketing pitch, are the fruit of a detailed cost-benefit analysis done in November 2008 with a big prospective customer.

A key variable, Harget says, is the number of users with laptops. "Most offices have 40% to 60% laptop users," he says. "But the trend is increasing." Citing market research data, Harget says by the end of 2009, more than 50% of all PCs will be laptops, and the majority of those will have 802.11n wireless built into them. The netbook trend may accelerate it even more. The implication is clear: why would these users need an Ethernet cable?

Cisco continues to maintain that an Ethernet cable is exactly what it needs. The vendor advocates what it calls a "unified network" — wired and wireless, with a 3G cellular overlay. While there are some use cases where 802.11n can work as the primary access network, a "wireless only" model is inflexible and the cost benefits exaggerated, says Chris Kozup, senior manager for Cisco's mobility solutions group. Aruba's right-sizing is a "shortsighted message from a wireless-only provider. It's penny-wise and pound-foolish," he says.

But one college was able to compare the relative costs of the two approaches. Morrisville State College (MSC) in New York, site of the first large-scale draft 802.11n deployment, with Meru Networks gear, has two recently built four-story dorms, which are owned by the college's auxiliary corporation. The corporation decided to deploy both a full wired network, with at least one port per bed, and two or three in the common area of each suite of bedrooms, and a wall-to-wall 802.11n WLAN, says Matt Barber, MSC's network analyst.

A wireless-only deployment would have needed two 48-port switches for the WLAN access points, which are cabled to the switches. The combined wired and wireless access network required 10 switches, with correspondingly more cabling. He estimated the difference in the "tens of thousands" of dollars. ■

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Cloud computing security: Who knew?

NET INSIDER
Scott Bradner

Cloud computing is big even though there is less than perfect agreement on just what it is. As a measure of success, Google gets more than 25 million hits for the term "cloud computing". If you add "security" to the search you still get 20 million hits, but a lot of the hits turn out to be articles focusing on the security issues with cloud computing.

A representative example is an article quoting Cisco CEO John Chambers saying that cloud computing is "a security nightmare." It's good to see that there are now some potentially meaningful efforts to think about the security issues with cloud computing.

> "The understanding of cloud computing is quite fuzzy with far too many facets."

One of these is by the ad-hoc Cloud Security Alliance, which published a "Security Guidance for Critical Areas of Focus in Cloud Computing" white paper last week. Sad to say, the guidance is as focused as the white paper's title.

The alliance does seem to have its heart in the right place, and the white paper provides a very good overview of what cloud computing includes, but it also demonstrates clearly that the understanding of cloud computing is quite fuzzy with far too many facets. The white paper lists five principal characteristics of cloud computing, three cloud delivery models and four cloud service deployment and consumption modalities. It seems like cloud computing can be just about any combination of these facets.

This makes any discussion of security quite a challenge.

The white paper tries to address 15 domains, from architecture to virtualization, and touches on legal issues, interoperability and incident response, among many other topics. The alliance lists and discusses issues that need to be considered in each of these domains, many of which I had not thought of, but which taken as a whole, are rather daunting.

Some of the discussions of the individual domains are very good. I recommend them to anyone who is considering the processing of any information that is not totally public using cloud computing. The discussions will not make you feel better, but you will better know what there is not to like and what you need to worry about.

What is missing in this white paper is a sense of a whole. It is more of a pile of issues than a unified proposal to address them. In this way the title of the white paper is quite accurate because it highlights the critical areas that need to be thought about.

Who knew that the concept of security in cloud computing was even possible to imagine? But efforts like the Cloud Security Alliance, as well as a few others I found in my searching, indicate that all is not lost — even if the road will be a long and confusing one.

Disclaimer: At more than 370 years of age, Harvard has traveled many a long and confusing road — mostly the final result has been good. But I've not seen a university position on the sensibility of this cloud computing road map, so the above travelogue is mine.

Bradner is Harvard University's technology security officer. He can be reached at sob@sobco.com.

Of subways, gov't subsidies and broadband

EYE ON THE CARRIERS
Johna Till Johnson

There's a lot of talk these days of the "Internet as public utility." In fact, if you parse the language of the stimulus package, you definitely pick up that perspective as part of the motivation for investing $7.2 billion in Internet infrastructure.

A couple years ago, I had a discussion with a friend, one of the few real experts in Internet traffic, who described the Internet as a public utility rather like public transportation systems — such as the New York City subway. The implication was that governments do a good job running subways — so why not the Internet?

I responded by pointing out that the NYC subway wasn't actually a public utility at its inception. Most folks don't know this, but the NYC subway started life (on Oct. 27, 1904) as a for-profit initiative by the Interborough Rapid Transit (IRT) company. The IRT was soon joined by the privately held Brooklyn Rapid Transit (BRT) and Brooklyn Manhattan Transit (BMT). The government eventually got into the act by developing its own system financed by taxpayer dollars, which competed directly with the IRT, BRT, and BMT.

During the period in which subways were largely privately owned and wholly competitive, there was an enormous amount of expansion and innovation. New lines went up and new technologies were pioneered. Prices stayed low. And the subway map of 1924 bears an eerie resemblance to that of 2009.

What happened? In the 1930s, when the Great Depression hit, the for-profit transit systems went bankrupt and were taken over by the city, which has operated them ever since. Happy ending, right?

Not exactly. On the bright side, the millions of folks who live and work in New York have had access to a more-or-less reliable, more-or-less affordable form of transportation for the past 80 years. On the downside, prices have risen, ridership has stagnated and some long-planned projects (such as the 2nd Avenue line, which would benefit yours truly) have been on ice for more than a half-century. (Metropolitan Transport Authority, I'm still waiting).

Last year, I mentioned all this to a financial analyst, Sanford-Bernstein's Craig Moffatt, who used the idea as the basis for a recent report (adding considerable detail and analysis, and generously remembering to credit me).

Moffat's conclusion? "Broadband is today's transportation grid.... The story of the subways highlights the fundamental trade-offs between competition — and its inherent sloppiness and redundancy — and nationalization (or, in this case, municipalization), with its inherent stagnation."

Well put — and the implication is that if the Internet does get nationalized, we can expect ubiquity and relative reliability, at the cost of innovation.

But that's not the entire story. One key difference between transportation grids and broadband services is what the economists call "demand elasticity." The appetite for subway rides is finite: You'll use the subway to get to work, and maybe to a couple of social engagements, but that's it.

With the Internet, in contrast, we've documented an appetite that, in the absence of external constraints (such as cost) is essentially limitless. This has some interesting implications for broadband economics. Stay tuned.

Johnson is president and senior founding partner at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

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Watchdogs smack FCC over E-Rate

FCC program still lacks coherent, tangible goals, GAO contends

BY BRAD REED

A report issued by the by the Government Accountability Office this week claims it is virtually impossible to measure the success of the Federal Communications Commission's E-Rate program because the agency has still not set concrete performance goals.

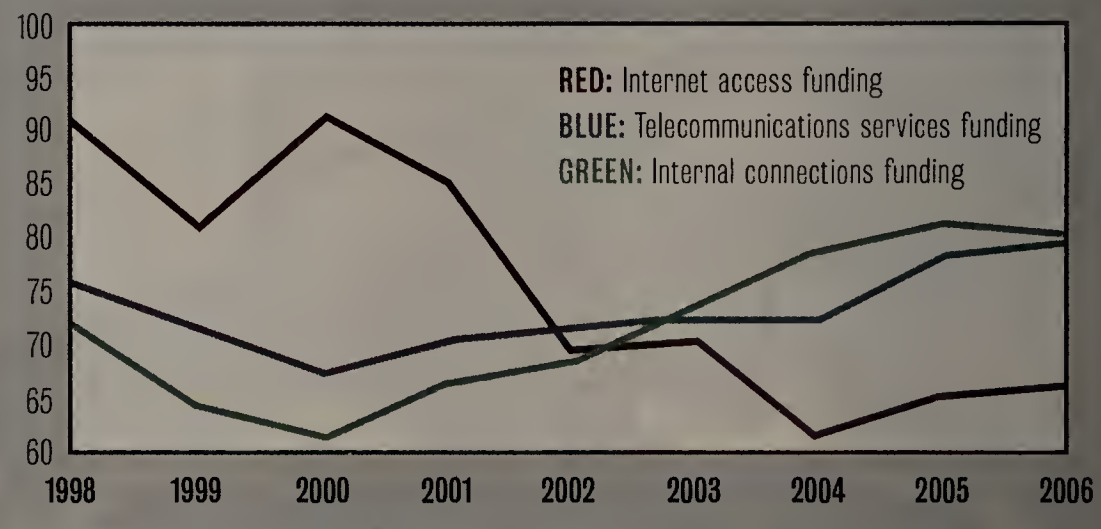
As a federal program that is designed to give U.S. schools and libraries access to affordable telecom and Internet services, E-Rate has allotted more than $22 billion to recipients since its inception in 1998. The program gives priority to funding telecom services such as Internet access, as well as wireline and wireless voice. If the program has leftover money from funding these prioritized services, it can also be used to pay for cabling, routers, switches and network services to improve telecom systems delivering data to schools and libraries.

However, the GAO says it cannot make a concrete assessment of the program's success because the FCC needs to establish what will make the program successful. Although the program does operate under the Universal Service Fund's goal of "providing telecommunications services to all Americans," it does not have a set of annual goals based on metrics such as new broadband connections or new phone services for libraries or private schools.

E-Rate's disbursement troubles

E-Rate has had trouble efficiently disbursing its funds since its inception in the late '90s. Over the past 10 years, the disbursement rates for Internet access (red) and telecommunications services (blue) have gone steadily upward and now top 80%. However, the disbursement rates for internal connections technologies such as routers and switches (green) have steadily fallen over that time.

Percentage of committed funding that was disbursed, by service category, 1998-2006



SOURCE: U.S. GOVERNMENT ACCOUNTABILITY OFFICE

Lack of goals

The lack of annual goals for the program makes it impossible to view any measurements of its performance in any proper context, the report contends. For instance, the FCC measures the annual number of applications it serves with E-Rate, as well as the average dollar amount awarded per funding request. But the FCC has not set any standards for how many applicants it should be serving nor how much money it should allot per funding request. In essence, the GAO says the FCC has established performance measures without establishing performance benchmarks.

The GAO says this is a major problem for the program, as it has no way of assessing its effectiveness and of reforming itself in a changing telecom market. In particular, the GAO says the FCC needs to consider prioritizing broadband connections over cell phone and landline services and it won't be able to do that until it sets specific benchmarks that correlate with broadband demand.

The GAO says E-Rate also faces problems with its rate of participation, as only around 63% of the estimated 150,000 eligible schools and libraries have taken advantage of the program. There is a very sharp divide in the participation rate between public and private schools, as 83% of eligible public schools utilize the program vs. 13% of eligible private schools. Additionally, the report finds that only half of eligible library systems participate in the program and that less than a third of eligible library branches utilize it.

Too complex

The major reason for not participating in the program is that potential users find that "the application process is too complex, takes too much time, or requires too many resources." The GAO credits the FCC with making the application process more accessible over the past four years, as around 43% of participants surveyed by the GAO said the process for applying to E-Rate was easier than in 2005. However, 42% of users said applying to the program was just as difficult while 15% of users said the process was even harder than in 2005.

In addition to citing troubles with the application process, some libraries have indicated their reluctance to use the program because of unease about provisions requiring them to install Internet content filters in return for funding, and one library official told the GAO that Web filters "inhibit access to free and open communication." And finally, a significant portion of eligible private schools do not participate in E-Rate because they don't participate in the National School Lunch Program, which is used to determine eligibility for discounts.

Moving beyond the participation rate, the GAO finds that the program has significant troubles with efficiently dispersing the funds it allocates. The GAO's review of E-Rate funding finds that more than one quarter of the $19.5 billion committed to schools and libraries between 1998 and 2006 was not paid out. In 2006, a full 35% of participants received less than 75% of the funds they were allocated through the program, and 9% of the schools and libraries didn't receive any of the funds they were allocated.

The two major reasons for these unused funds, the GAO says, are that participants overbudgeted their needs and applied for more money than necessary and participants sometimes did not seek reimbursement for the full amounts of their expenses. These unused funds are a problem, the GAO says, because it means vastly less funding for routers, switches and other technologies that help improve Web connectivity.

In response to the GAO's report, FCC acting chairman Michael Copps acknowledged that the program's goals need to be updated and said the FCC "recently requested comment on establishing new goals" for E-Rate. He also defended the program's disbursement rate and said the GAO's contention that E-Rate's disbursements had been declining in recent years was "not accurate [because] disbursements may be delayed for a long period due to an applicant's extension request or appeal."■

ADNs accelerate and secure apps

BY DAVE ASPREY

Corporate data consolidation and the adoption of Web-based application models such as software-as-a-service are driving the need for application-level intelligence and control for the distributed network. Application Delivery Network (ADN) solutions address this need by providing an application-focused layer of infrastructure that significantly reduces a business' vulnerability to performance and security problems.

When enterprises consolidate data centers, branch office employees must traverse WAN links to reach applications and data. These links are prone to congestion and latency, making application performance unpredictable. At the same time, the proliferation of Web-based applications — and the fact they're often implemented by users within business units — has created a tremendous burden on IT to ensure their performance and security.

When a user complains that an application is sluggish, IT has a difficult time verifying the problem or pinpointing the cause because traditional network devices and tools operate at the packet level, with no visibility into application flows. IT can't distinguish between business-critical applications, malware and recreational traffic such as iTunes, let alone tell if SAP is being starved of bandwidth in the Boston office by users watching YouTube over the WAN link.

ADN is an application-focused layer of infrastructure that enables IT to see all applications on the network, accelerate performance, optimize bandwidth, and secure the distributed enterprise against malware and misuse. ADN solutions combine three technologies to make the network application-aware:

Visibility technologies classify and monitor network traffic at Layers 4-7+, giving IT a complete picture of what applications are running, along with a real-time view of network and application utilization and performance. Leading ADN solutions can analyze more than 600 applications, giving IT insight into URLs and external sites within HTTP traffic, for example, as well as SSL-encrypted applications.

Visibility data includes traffic per application and site, bandwidth consumption per application, user response times, and jitter, delay and loss for voice and video applications. Once IT knows how applications are actually behaving, ADN gives them the tools to define and enforce policies that govern that behavior.

Acceleration technologies enable IT to optimize everything from internal databases and file access to SaaS applications and IP telephony calls.

Acceleration mechanisms include QoS controls such as bandwidth allocation, bandwidth limiting and traffic priority for VoIP, video and other real-time applications; application-specific compression techniques; and protocol optimization. Object- and media-level caching, as well as byte caching, also ensure that rich media, Web 2.0 and other business traffic is optimized while recreational traffic is constrained.

> ADN is an application-focused layer of infrastructure that enables IT to see all applications on the network.

Security technologies are crucial in today's Webified world, where even trusted sites can be infested with malware. ADN solutions, with their focus on WAN and Internet communications, provide security capabilities that include filtering Web requests and content, Web virus scanning, malware detection and containment, content validation, certificate validation, data-leak prevention, SSL traffic inspection and control of instant messaging, peer-to-peer and streaming traffic.

Working together, these technologies enable IT to assess what's happening at the application level and determine how best to mitigate problems. For example, in Acme's Boston branch office, users have complained that they can't access files over the network. With ADN, IT observes that Microsoft file transfers account for 40% of the traffic between the Boston branch and the Dallas data center, but that recreational traffic (iTunes, YouTube and so on) dominates that link, which has a latency of 85 ms.

IT now knows it has two separate performance issues to address — bandwidth misuse and excessive latency. With ADN, IT can limit (or eliminate) non-business traffic on the link, and accelerate the Microsoft file transfers to offset the high latency.

Vendors deliver ADN solutions via a set of devices that complement the existing network infrastructure by providing intelligent points of control at Internet gateways, branch offices, data centers and individual end points. ADN's visibility, acceleration and security technologies are typically packaged into two or more platforms that encompass an application-level probe, application acceleration, WAN optimization and secure Web gateway functionality.

By combining multiple functions in one box, ADN vendors limit the number of new devices needed. For example, ADN probes may include QoS and other acceleration mechanisms in addition to visibility technologies.

Most WAN optimization controllers are symmetric, meaning that a WOC is required at both ends of the connection — say, the branch office and the data center. Some ADN vendors combine WOC and Web gateway capabilities into the same box. This lets users in a branch office access Internet-based sites directly rather than having their traffic backhauled over the WAN to a central gateway at the data center for security screening and policy control.

By providing the same protection and acceleration capabilities at the branch as at the data center, these ADN solutions ensure that SaaS and other Web-based applications and services are delivered securely to branch users at performance levels that meet service-level agreements (SLA). In addition, such operation ensures that branch users' recreational traffic doesn't traverse the WAN.

By giving enterprises application-level visibility and control over their distributed network, ADN solutions boost application performance and security. As a result, enterprises can move ahead with data and server consolidation, confident that SLAs will be met. With ADN's ability to secure and accelerate any application for any user, anywhere, user productivity also increases.

In addition, ADN solutions help enterprises maximize their network investments by cutting bandwidth costs or eliminating the need for expensive bandwidth upgrades. When problems do arise, the ADN's application-level visibility lets IT quickly identify and resolve issues, shortening mean time to repair.

With ADN, enterprises can readily align application security and performance with business goals.

Asprey is vice president of technology and corporate development at Blue Coat Systems.

This vendor-written tech primer has been edited by Network World to eliminate product promotion, but readers should note it will likely favor the submitter's approach.

GEARHEAD

Mark Gibbs

A couple of Twitter search services

Last week I offered anyone who might be interested a copy of the batch files and other tools (cURL, grep, my nasty little program and the Excel spreadsheet) for analyzing Twitter "Tweets" — all you had to do was send me an e-mail. I've had quite a few requests and you will get the files in a few days — the delay is because I found a bug in my nasty little program and I haven't had time to fix it.

While the Excel approach to analyzing Tweets was interesting, it was clumsy and ugly. So if you want to keep track of a current hot topic, how else might you do it?

You could search for exactly that term you're looking for, but with Twitter Tweets there's another way to look for relevant content using "hashtags." Hashtags is a convention that uses a hash mark (#) to flag words in Tweets that users want to be treated as description tags. Thus, the hashtag for swine flu could be "#swineflu" (spaces aren't allowed so hashtags usually merge the words or separate them with dashes or underscores).

While we're on the topic of tags you might want to check out "Tagging: People-Powered Metadata for the Social Web" by Gene Smith (also see Smith's Web site [www.nwdocfinder.com/9824] for more on tagging). This book contains useful information but is somewhat dry and more suited for a technical audience (it also has a fair amount of code). Curiously, it mentions nothing about Twitter or hashtags despite being copyrighted in 2008. I'll give it 3 out of 5.

Anyway, hashtags can be searched for on the aptly named hashtags.org, which is way smarter in this area than Twitter's own search service because hashtags.org will also give you a list of the other hashtags that contain the same string. Thus, along with #swineflu you'll see the tags #swineflu, #swineflue, #swineflu-cbc, #swineflu-related, #swineflu-ing, #swineflu-nz. This can be really useful as the great unwashed occasionally pick an incorrect spelling (#swineflu-cbc, for example, was apparently an attempt to type "#swineflu-cdc").

What's great about hashtags.org is that clicking on a specific hashtag among those suggested will take you to a page that shows a graph of the hashtag's popularity over the past month (which wouldn't work for the term "rovio" that we've been discussing over the last few weeks as it appears no one has used it in a hashtag).

Hashtags.org provides a news feed for the selected hashtag which is, by default, in Atom format (although if you change the URL from ending with messages.atom to messages.rss you'll get an RSS formatted feed).

There's a small problem if you want to do anything with this data in Excel: While Google Reader will happily access a hashtags.org feed in either format, it appears Excel will not. And, of course, Excel reports the problem with a cryptic error message that requires you to go and find a log file that contains the error report. Argggh.

Another interesting Twitter search tool can be found at Twitscoop. The home page shows a tag cloud of the most popular words being used on Twitter, and offers a search box that brings up a list of Tweets mentioning that topic and a graph showing the number of mentions over time.

Click on the graph or the link at the foot of the results and the next page will be dedicated to your search results and allow you to change the graph time window from the default six hours to either one day or three days.

I'll give hashtags.org a rating of 4 out of 5 (an API would increase its score) and because they don't provide any kind of news feeds or API I'll rate Twitscoop at 3 out of 5.

Gibbs can be reached at gearhead@gibbs.com.

COOLTOOLS

Keith Shaw

Wireless photo frame with a twist

The scoop: Kaleido R7 wireless digital photo frame, by IPEVO, about $200.

What it is: Like many other digital photo frames, the Kaleido R7 will display digital photos on its very nice 7-inch LCD screen. The device supports connections from memory cards (SD, MMC and Memory Stick) and USB flash drives, or a direct connection to a PC via USB cable (not provided). What makes the R7 slightly different is a Wi-Fi connection that lets you synchronize photos wirelessly from another computer on the same wireless network. The device comes with IPEVO's EyeStage software, which allows for the synchronization of photos from the PC to the R7. The EyeStage also lets you add RSS feeds (both photo-based and info-based, like blogs) to the device, letting you view photos from online photo services, such as Flickr and Google's Picasa.

The Kaleido R7 wireless digital photo frame can rotate photos and switch from portrait to landscape easily.

Why it's cool: I was most impressed with the R7 hardware, which includes a sleek black and white finish, and a beautiful LCD screen. The device can display images in landscape (horizontal) or portrait (vertical) mode by rotating the display 90 degrees, and the software is smart enough to adjust the photo once you've switched from one mode to the other. For example, if the device is in the landscape position and a portrait photo is on the screen, after you rotate the display physically, the portrait photo will enlarge to fit the screen correctly. A touchpad on the R7 lets you navigate through menus, or you can use the very thin remote control.

The software was easy to install and connecting to my WPA2-secured home network was a simple process.

Some caveats: In order to display the "live feed" of RSS feeds or online photo services, you need to have the EyeStage software running on a PC that's powered at the same time (and on the same wireless network). That may make sense when you need to synchronize the RSS feeds with the R7 initially, but it doesn't make sense once you've established the live feed. The purpose of adding a Wi-Fi connection to a photo frame should be so you can view updated photos from the Internet without needing to go through a powered PC (if you do that, you might as well have a Bluetooth connection). The EyeStage software does let you download the live stream into the "My Gallery" section of the device (there's 512MB of memory on the R7), but that also takes away the "live" feature — if you add photos to the stream (or if you're viewing a public Flickr feed), you have to wait until the EyeStage software is running again on the PC and then synchronize it with the R7. This defeats one purpose of having a wireless frame. In addition, the $200 price tag may turn away some users.

Grade: ★★★ (out of five).

Shaw can be reached at kshaw@nww.com. Follow him on Twitter at http://twitter.com/shawkeith.

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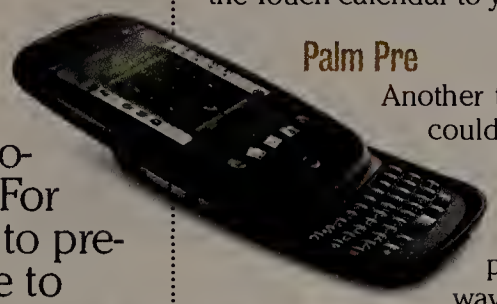
DEATH OF THE MOUSE

NEW TECHNOLOGIES MAY RENDER POINTING AND CLICKING OBSOLETE

BY JOHN BRANDON

The venerable mouse, created by Internet pioneer Doug Engelbart, has been unchallenged since the dawn of modern computing. But rapidly maturing touch and speech technologies are threatening to dethrone the mouse as the dominant computer input device.

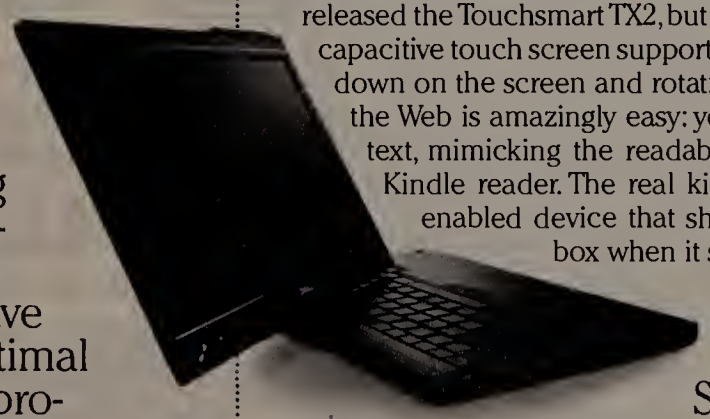
Looking ahead five years, as the idea of a computer changes from a box under your desk to a device on your car dashboard, or on the bathroom mirror, or that you carry in your pocket, the mouse will become less important — maybe even a distant memory.



These new touch and talk technologies are already making an impact. For example, CNN uses a touch display to present information, and Intel used one to showcase its new processors at the recent CES show. Ford uses speech recognition in its cars, and FedEx operates its phone lines with a computer voice — with a distinctive chime that most of us recognize immediately.

Apple's iPhone sparked the touchscreen revolution. Since the iPhone debut, companies such as HP and Dell have decided to bring that easy finger control to the desktop. And companies such as Nuance and TellMe are taking advantage of improved computing power and better statistical models to make speech technologies more viable than ever before.

"The magic is in grasping the human objectives of an interface and combining the best technologies simultaneously to address those objectives," says Don Richards, the creative director at Foghorn Creative, the company that designed the Intel touch wall at CES.



Of course, nobody is predicting that the mouse will totally disappear. Tests based on Fitt's Law of human-computer interaction have proven that the mouse is the optimal pointing device. Engineers and programmers will continue to use them.

Yet, these new products demonstrate how touch and speech technology have gone from an interesting idea to legitimate technologies. Here are some examples:

HP TOUCHSMART IQ816

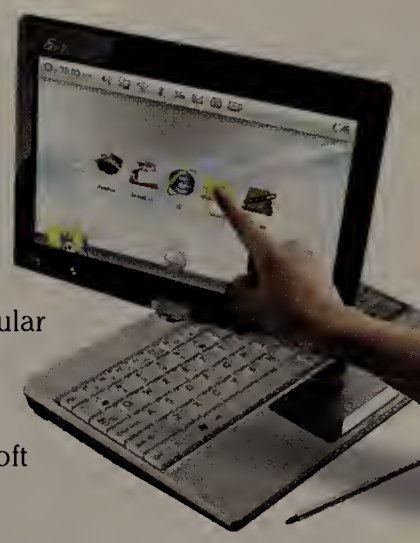
The HP Touchsmart really is smart. There's a separate touch interface that runs on top of Windows. You can flick through photos, download an egg-timer application that helps you whip up dinner, or play chess with your fingers. The model I tested is a 25-inch monster with an Intel Core 2 Duo processor, so it runs fast enough for games and Photoshop editing.

Yet, it's the potential of this machine that has me hooked. The Touchsmartcommuinity.org showcases some interesting applications, including one in which you can interact with YouTube.com videos. HP is committed to make this touch platform work. One example: you can sync the Touch calendar to your Google Calendar.

Palm Pre

Another touch device worth noting is the Palm Pre, which could be the ultimate savior of Palm. The new WebOS will replace PalmOS entirely, relying on touch control instead of a stylus. The main benefit: smartphone users prefer touch because it means operating a phone with one hand, interacting in a more physical way with the screen and browsing through media faster. During a hands-on test, it became obvious that Palm is serious about touch: the screen responds quickly to any input, such as flicking a photo or ending a call. (Competing models from Samsung and HTC rely on haptics technology for a slight buzzing sensation, confirming each click.)

Asus EEE T91



Like HP, Asus is set to take the world of touch to a whole new level. They are introducing the Eee Top desktop model this year and a convertible notebook PC called the T91. The resistive screen does not support multi-touch, which requires a capacitive screen. But Asus deserves extra credit for the Linux operating system, which offers a painting program, a touch browser and a nifty circular interface that you can flick through with a finger. The most impressive feature: a tabletop interface for browsing photos where you can spread out images, ala the Microsoft Surface table.

Dell Latitude XT2

With technology provided by N-Trig, the Dell Latitude XT2 is the very latest — and most advanced — touch computer on the market. (HP also just released the Touchsmart TX2, but we were not able to test it out yet.) The capacitive touch screen supports two-fingered gestures, such as clicking down on the screen and rotating a photo at the same time. Browsing the Web is amazingly easy: you can just flick up and down through text, mimicking the readability and easy control of the Amazon Kindle reader. The real kicker: the XT2 may be the only touch-enabled device that should work with Windows 7 out-of-the-box when it ships later this year.

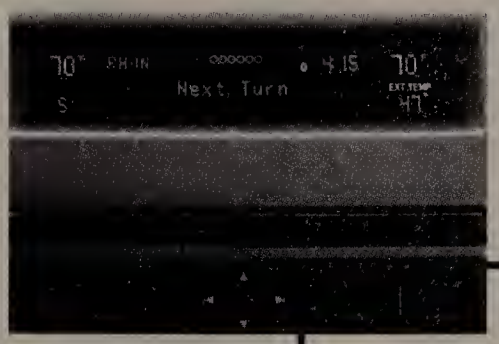
Speech recognition

Speech recognition was a buzzword, then it was a misnomer — now it's just another technology. Speech recognition expert Bill Meisel, president of TMA Associates, says the first companies to offer speech recognition promised too much and

delivered too little. Today, it is all about the statistical models. With each new year, companies such as TellMe and Nuance accumulate more data to learn speech patterns and dialect. Most critically, speech systems have proven their worth by limiting voice commands to just a few terms and slowly expanding.

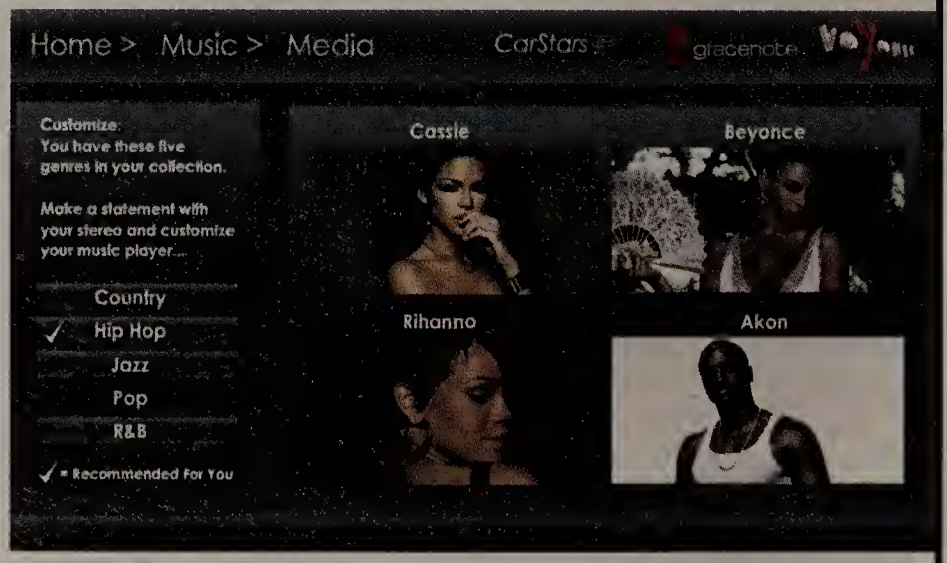
"The more people talk to computers, the more data speech technology companies have to create the models, and the more parameters they can use in these models," Meisel says.

Here are some examples:



Microsoft Sync 3

The next version of Microsoft Sync, which will be available in Ford vehicles later this year, will use a new voice called Samantha that sounds less computer generated. TellMe, the Microsoft-owned subsidiary, is also working on mapping features to make Sync work like a GPS. And, a Bluetooth phone connection could mean tapping into the Internet for voice search. Most importantly, the company uses an entire data center to analyze voice commands. In a road test, the "recognizer" was highly accurate. TellMe has learned a few lessons about speech: it powers the 1-800 services for FedEX and many others.



GraceNote CarStars

Imagine driving in a car on a country road. You lean back, wind in your hair, and suddenly get the urge to play an old U2 song. Instead of fumbling with a satellite radio station or pulling out a scratched CD, the GraceNote CarStars system lets you speak to your stereo. In a hands-on demo, I was able to play songs by speaking the name, and listen to the actual artist make suggestions. GraceNote is still working on the product, but the idea is that if you're a fan of U2, then Bono would be the one who talks you through music options.

Garmin Nuvi 855T

It makes sense that a GPS device would support speech recognition — it means focusing on the road and typing with your fingers less. The Garmin Nuvi 855T is easily one of the most advanced speech-recognition devices available for your car. You can speak any term shown on the screen, use your voice to search for local business names, and find other points of interest. There's still an occasional glitch: when looking for a new address, I decided to go "back" but the speech analyzer kept thinking I meant Bakken Street. Fortunately, the GPS usually repeats what you say, so there's also a back-door to start over or just try saying things a different way.

Nuance Dragon Naturally Speaking 10

Speaking to a computer still feels a bit awkward, especially if anyone else is around. Yet, as more people interact with a PC this way, it could become more natural. Nuance has accumulated a vast 'speech vocabulary' over the past several years and does a much better job of detecting words. Processing power — especially on dual and quad-core processors — also helps. There's still a cumbersome training process that takes 30 minutes, but Dragon software is getting there. In dictating a page of text, the program only typed a few minor errors. Sounds-like words are still an issue — the clothier Herbergers sounds too much like hamburgers to a computer.

Brandon is a freelance writer in Minnesota. He can be reached at johnmbrandon@gmail.com.

Touchless technology

Touch and speech technology are not the only ideas that could replace the standard desktop mouse. For example, Microsoft is set to announce a "touchless" technology in which you motion to the screen to control the interface, skipping a touch display and speech input altogether.

■ LOGITECH MX AIR MOUSE

Although this device has been out for a while, it's packed with several features that make it ideal for living room control of a PC across the room. For one, it supports gestures such as a side-to-side movement to control volume, and has an accelerometer (similar to the iPhone) that senses when the device is at rest or ready to start tracking mouse movement. Best of all, Logitech skipped a complex calibration setup process — the Air mouse actually learns on the fly.

■ HITACHI WAVE REMOTE

Here's another alternative input concept. At CES, Hitachi showed off a "wave remote" technology that you can use with family room HDTV. There's no handheld device at all, and no display to touch. Instead, to change a channel or turn up the volume, you just move your hands. For example, to bring up the interface, you wave at the screen. The technology uses infrared sensors and a 3D tracking camera that would be built in to the television, scanning your movements in the same way the Apple iPhone accelerometer senses movement when you turn it to the side.

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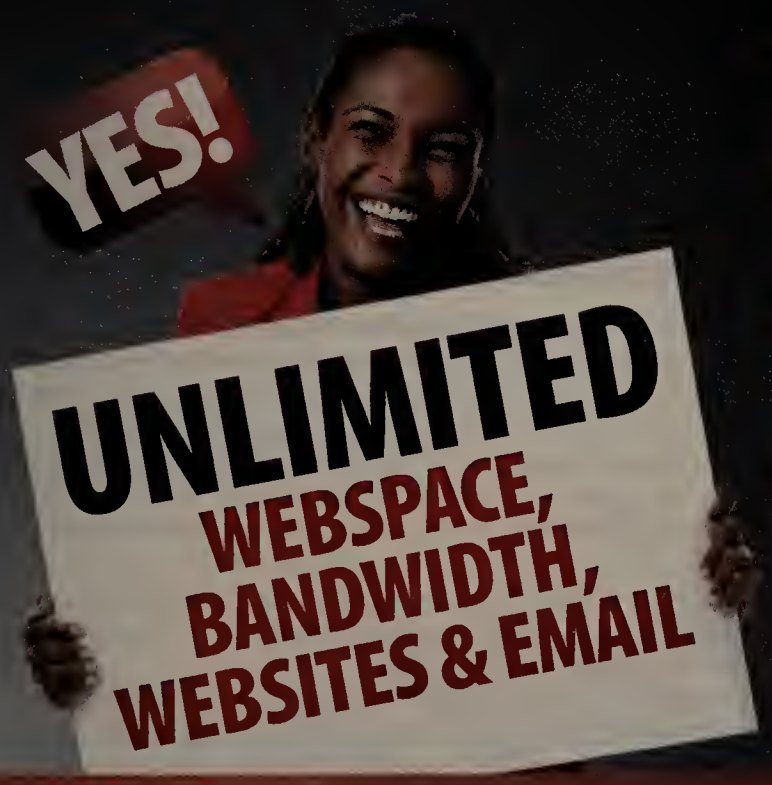

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Sun 7410 unified storage system shoots for high performance

It hits its numbers, but serves up configuration issues as well

BY LOGAN HARBAUGH

Sun's latest addition to its high-end enterprise storage repertoire — the iSCSI-based Sun Storage 7410 Unified Storage System — is certainly a high-performance offering, but we found some usability and integration issues.

The system leverages Sun's ZFS file system, and uses solid state disk (SSD) to replace expensive cache and improve both read and write performance without the need for costly 15,000 or 10,000 RPM hard drives. It uses up to six 100GB SSDs for a read cache, and as many as four 18GB SSDs per drive shelf (up to 16 total) for a write cache.

Sun claims a maximum performance of 288,000 I/Os per second and 1.1GBps throughput for the 7410, and based on our limited testing, we feel it should be able to sustain those kinds of numbers with either four, four-port 1Gbps Ethernet or multiple 10Gigabit Ethernet adapters.

The system consists of one or two Sun Storage 7410 controllers equipped with eight 2.5-inch drive bays, accommodating as many as six 100GB SSD drives and two 500GB SATA drives for boot purposes. The 7410s are connected to as many as 12 J4400 drive shelves, each of which supports up to 24 SATA drive bays, of which up to four can be 18GB SSDs for write caching. The 7410s are connected to the J4400s via external SAS cables.

The system Sun shipped to us consisted of two Sun Storage 7410 controllers, each with two 100GB SSDs and two 500GB SATA drives, and one J4400 system with four 18GB SSDs and 20 750GB SATA drives. The 7410s each had seven gigabit Ethernet ports, plus one lights-out monitoring (ILOM) port and a serial management port, as well as KVM connections.

Each 7410 controller had 16 Opteron cores, 128GB of RAM, and two 100GB SSDs set up as read cache. Three of the gigabit Ethernet ports are used for cluster interconnects and four are available for iSCSI traffic. There are three open slots, which can be used for four-port Gigabit network interface cards or dual-port 10G adapters.

Initial setup can be accomplished through the serial port or via the management port if DHCP is enabled — you only need to discover the network address assigned and connect to it via browser or SSH. After the initial configuration of network interfaces, you can log into the Web console and complete the cluster configuration.

Cluster configuration was a matter of letting the system detect the second connected Sun Storage 7410 and telling it to add the second system to the cluster. The redundant controllers can be set up in an active-active or active-passive mode. Active-active provides two separate storage pools, each with its own IP address. If one of the controllers fails, its pool is taken over and served by the other controller. In an active-passive configuration, only one controller is active, serving one storage pool. If the active controller fails, the passive controller takes over. The active-passive controller is less complex to set up, and has a faster switch-over time in the event of failure, while the active-active system has less utilization under normal circumstances, and provides two storage pools rather than one. Failover takes a little more than a minute in active-passive mode and about 30 seconds longer than that in active-active mode. In either case, the iSCSI initiators on the test servers lost the connection and had to be manually reconnected to the iSCSI volumes.

While we could test failover features of the cluster, testing the controllers for performance in a clustered configuration was not possible because of an unresolved issue with the system Sun sent to be tested, which included freezing of the administrative interface, spurious reports of drive failures and failure of the ILOM interface.

Therefore, we pulled one of the controllers out of the test bed and proceeded with all performance tests on a single controller. We would have preferred to set up each of the four available iSCSI ports on this single controller as a separate port on the same subnet of our network, but this configuration is not supported by Sun at this time (although Sun did tell us it is working on this kind of support for a future release). The Sun Storage 7410 requires a different network for each port on the controller, which could be as many as 16 ports if you used all available slots for four-port gigabit cards. This is a clumsy and inefficient way to set up storage because if you need to change the servers around for any reason, and each one has a different subnet configuration, managing the pool of servers becomes more difficult.

Following instructions from the Sun engineers, we then set up all four ports as a single aggregated connection using link aggregation control protocol. However, because the control interface uses one of these same four ports, we had to designate one port as an admin port, and three as aggregated iSCSI ports.

Performance details

Performance of the single controller system, as far as our limited test bed could verify, was excellent.

The controller averaged 67MBps throughput per gigabit connection.

See Sun, page 30

NETRESULTS

Product	**Sun Storage 7410 Unified Storage System**
Vendor	Sun www.sun.com
Price	$137,790, with one controller, $192,465 with redundant controllers.
Pros	High performance.
Cons	Redundant controller option not compelling; difficult configuration parameter; multiple management interfaces required for full administration.
Score	**3.75**

SCORECARD

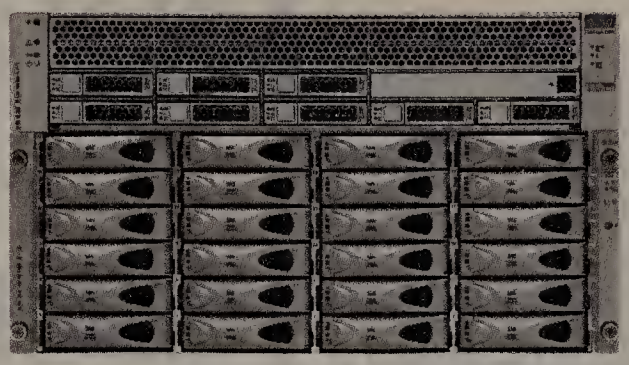
Action	Weight	
Performance	25%	**5**
Management	25%	**3**
Interoperability	25%	**3.5**
Enterprise features	25%	**3.5**
Total score		**3.75**

Scoring key: 5: Exceptional; **4:** Very good; **3:** Average; **2:** Below average; **1:** Subpar or not available.

Sun

continued from page 28

We did not have enough servers to generate enough traffic to max out the aggregated connection. However, taking our base numbers and extrapolating them out to a scenario where there were 16G Ethernet connections, the number would come in around 1,072 I/O/sec, which is very close to Sun's I/O claims for the Sun Storage 7410. That assumes you didn't encounter any scalability issues along the way, of course.



The 7140 Unified Storage uses solid state disk to replace expensive cache and improve overall performance.

With four gigabit Ethernet connections across our IOmeter-driven tests, we were unable to move CPU utilization on the Sun Storage 7410 system above 3% with the average of 1,600 IO/sec each of our four connections, which bodes well for the system's ability to support the 30 or 40 servers necessary to generate the 288,000 IO/sec maximum Sun advertises.

Management is somewhat complex, with two separate consoles used to run the system: the admin console is accessible through the Web interface on the primary iSCSI port, and an ILOM console accessible through either SSH or a serial terminal. The ILOM console is theoretically available through the Web interface, but its use is not officially supported by Sun.

The ILOM interface is used to make changes to the BIOS, run the initial network configuration, and perform some manual diagnostic tasks that aren't available through the administrative console. The admin console is a browser-based Java application that lets you set up volumes, snapshots, replication and all the normal storage-area network (SAN) functions.

The business analytics section of the GUI-based admin interface contains very useful monitoring tools, with the ability to drill down to specific interfaces, network or storage protocols, as long as you're willing to dedicate one of the iSCSI ports to the admin console. Reports are available in a wide variety of formats, with many variations. For example, you can get network I/O as a raw number, by port, by type of protocol or by source. There are similar reports for disk IO and overall storage utilization. Historical data is available as well, and the amount of storage used for logging can be adjusted to keep data for longer or shorter periods of time as desired.

One management oversight is the lack of an automatic update process. Updating the Sun Storage 7410 controller software required downloading a 487MB file and manually uploading it to each controller, then rebooting (which takes more than three minutes). After updating, all security certificates were invalid, which requires several steps on either Internet Explorer or Firefox every time the console was accessed from a new system.

Sun offers a standard, although not exceptional, set of storage features with the Sun Storage 7410, including remote and local replication over synchronous or asynchronous connections, snapshots and mirroring of volumes. While Sun claims support for industry standards, this statement is mostly grounded in the fact the system uses industry standard parts. However, the Sun Storage 7410 cannot be expanded with parts bought from anyone but Sun without losing the warranty and the Storage Management Initiative - Specification (SMI-S) developed by the Storage Networking Industry Association to promote interoperability between SAN products is not supported. The company also says that future software features will be available at no additional cost, though this is only true as long as you pay the yearly maintenance fees.

The price for one controller and the storage allotment we tested is $137,790, comparatively expensive for 20TB raw capacity, compared with other iSCSI or even FC systems. The price for a redundant controllers system with the same amount of storage is $192,465.

The Sun Storage 7410 system is clearly positioned — in terms of price, feature set and performance capacity — to go toe-to-toe with big systems from NetApp and EMC that are designed to support dozens of connected servers simultaneously. While we could not push the box to its capacity, we were impressed by what it could handle in our test environment. That said, Sun could improve the overall usability of the product with some upgraded management tools and wider configuration support in its clustered implementation.

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How we did it

Our test bed consisted of four servers: an HP ML370G5 with dual Xeon 3.0GHz, 6GB RAM and dual gigabit Ethernet; an HP DL360G4p 2xXeon 3.4, 2GB RAM and dual gigabit Ethernet ports; and two SuperMicro-based system each with one Xeon 3.4GHz, 2GB RAM and dual gigabit Ethernet ports. All servers running Windows 2003 Server. All were connected to a Cisco SLM2048 gigabit Ethernet switch, as were the Sun Storage 7410 controllers. Three of the four 7410 iSCSI ports were aggregated together in an LACP group.

To measure the Sun System 7410 performance, we used IOmeter, a popular I/O subsystem measurement and characterization tool for single and clustered systems that supplies results in both MB per second and I/O per second.

There were four sets of workloads running across the servers, each worker simulated the storage traffic typical of an Exchange 2003 server, an Exchange 2007 server, a file server and a Web server. Each of the worker processes had an I/O queue of 32 entries, ensuring that the Iometer systems were keeping plenty of I/O ready to go. We believe this workload at the level we configured far exceeds what a typical server would present.

The Exchange 2003 workload used three workers generating 4KB I/Os consisting of 67% reads and 33% writes with 95% of those being random and 5% sequential; and one worker generating 64KB I/Os consisting of 5% reads and 95% writes with 5% of those being random and 95% sequential.

The Exchange 2007 workload used three workers generating 8KB I/Os consisting of 50% reads and 50% writes with 95% of those being random and 5% sequential; and one worker generating 64KB I/Os consisting of 5% reads and 95% writes with 5% of those being random and 95% sequential.

The file server workload used two sets of two workers each generating 10% of 4KB I/Os, 10% of 8KB I/Os, 40% of 32KB I/Os and 40% of 64KB I/Os consisting of 80% reads and 20% writes with 5% of those being random and 95% sequential.

The Web server workload used two sets of two workers each generating 10% 8KB I/Os, 20% 32KB I/Os, 20% 64KB I/Os, 20% 256KB I/Os and 30% 512KB I/Os consisting of 95% reads and 5% writes with 5% of those being random and 95% sequential.

Each workload was run for 15 minutes and repeated each test three times.

Microsoft
continued from page 1

and automate management tasks from detection to remediation is a year away, and cross cloud federation capabilities that will make it easy to manage workloads between public and private clouds won't come until 2011 at the earliest.

So even as System Center management tools are finding favor with Microsoft users, key pieces of the cloud management puzzle are tied up in the portfolio's road map that stretches from the end of 2009 into 2011.

"There is real concern from my perspective about how they are going to bring this all together moving forward," says Steve Brasen, an analyst with Enterprise Management Associates. "We are in the early days of this. This year they seem to be laying the ground work for bigger announcements. They have a lot of obstacles to overcome to bring integrated management together."

One area that needs to be fleshed out is security. Microsoft said its Geneva identity management platform for the cloud and its Forefront tools would be integrated with System Center's forthcoming tools for federating public and private clouds, but the details of how that will be done were not disclosed.

But clearly that information is needed by corporate users.

"How secure this is will make or break the decision for us," said one IT architect with a government agency who asked not to be named. "When we look at the cloud we ask 'can we trust your service?' We believe Microsoft is two to three years out from a competent platform."

Microsoft's road map reflects that belief. In fact, the push to bring everything together will start with the simultaneous rollout of Windows 7 and Windows Server 2008 R2 this fall. Microsoft has tagged the start of an upgrade to its entire System Center portfolio on that event.

The client-server combination will bring enterprise features such as Branch Cache and Direct Access that will require management and monitoring oversight.

The next version of Operations Manager — 2007 R2 — will ship before the end of June with cross-platform support for Linux and Unix environments, service-level monitoring and deep support from partners.

Virtual Machine Manager (VMM) 2008 R2 is slated to come 60 days after the shipment of Windows Server 2008 R2 and include controls for managing the Live Migration features of the server's Hyper-V platform.

But it will be the version of VMM after the R2 release that will bring critical features for provisioning and managing virtual machine-based resources between public and private clouds. Microsoft demonstrated a feature called Cloud Federation that simplified the management of workloads on different networks.

A new version of Configuration Manager is on track to ship in 2011, following the shipment of the 2007 SP2 version slated for later this year. The SP2 version includes features such as conditional delivery, which lets administrators set policies on how users will access applications based on what device they are using.

The big picture is to integrate System Center tools into a logical whole that can analyze and aggregate data from the "infrastructure fabric" that houses hardware, operating systems and applications as separate entities. But the ability to create that logical whole is missing because Microsoft has yet to ship Service Manager, which it unveiled in 2006.

The problem resolution software has been delayed repeatedly because of Microsoft's inability to get the System Center tools to work together smoothly. Service Manager is designed to pull all management data together and act on the results based on policies and workflow rules. After another delay last year, Service Manager is now slated to ship in 2010.

Some analysts say the elongated release schedule for new and updated System Center tools points to another issue.

"Operations Manager and Configuration Manager have had a chance to mature," said Don Retallack, an analyst with independent research firm Directions on Microsoft. "These other pieces have not achieved the same level of maturity and then with Service Manager we have to wait and see how it integrates all of this."

But Retallack said Microsoft has done integration right in making sure everything works under PowerShell.

Another piece that is in the wings is Window Azure, the cloud operating system introduced last year. Having nearly identical Windows platforms on either side of the cloud equation will be key for management until Microsoft and others can develop cloud standards.

The effort got underway last week with the Distributed Management Task Force and a handful of vendors launching the Open Cloud Standards Incubator, which will work to develop a set of informational specifications for cloud resource management. ■

Coming attractions

Microsoft last week presented its annual management software road map at its Management Summit. Here is a look at what is on tap for new or updated versions of System Center tools.

SYSTEM CENTER SOFTWARE	2009	2010	2011
Operations Manager	2007 SP2		vNext
Configuration Manager	2007 R2		vNext
Virtual Machine Manager	2008 R2		vNext
Data Protection Manager		2010	
Service Manager		2010	vNext
Desktop Optimization Pack	2009 and R2	2010 and R2	2011 and R2
Online Desktop Manager		V1	V2 and v3
Essentials		2010	

■ **Network World**, 492 Old Connecticut Path, Framingham, MA 01701-9002, (508) 766-5301.

Periodical postage paid at Framingham, Mass., and additional mailing offices. Posted under Canadian International Publication agreement #PM40063731. Network World (ISSN 0887-7661) is published weekly, except for a combo issue in November and the last week and first week in each of the following months: Dec./Jan., March/April, May/June, June/July and Aug./Sept. by Network World, Inc., 492 Old Connecticut Path, Framingham, MA 01701-9002.

Network World is distributed free of charge in the U.S. to qualified management or professionals.

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Network World can be purchased on 35mm microfilm through University Microfilm Int., Periodical Entry Dept., 300 Zebb Road, Ann Arbor, Mich. 48106.

POSTMASTER: Send Change of Address to **Network World**, P.O. Box 3090, Northbrook, IL 60065. Canadian Postmaster: Please return undeliverable copy to PO Box 1632, Windsor, Ontario N9A7C9.

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BACKSPIN

Mark Gibbs

Looking for swine and the data society

Oh great. First the *&%$#@ %$#*%& on Wall Street sinks the financial systems of the world, we create a national debt that's as big as … well, the national debt, and now we have the beginnings of what could turn out to be a swine flu pandemic.

As of this writing, the World Health Organization (WHO) has just raised the threat level to Phase 5, which is described as "a strong signal that a pandemic is imminent and that the time to finalize the organization, communication, and implementation of the planned mitigation measures is short."

Oh, joy. Of course the WHO Web site got sick as a result of this — the rush of visitors just completely porked their servers.

Allow me to digress for a moment and note that *The New York Times* just published a piece that stated, "nine people — ages 6 to 57 — appeared to have swine."

Anyway, by the time you read this we may all be staying away from public places, hunkering down in our houses and waiting for the whole thing to go away. Kind of like the financial crisis except we know at least our 401(k)s won't get sick because they are already dead.

So now that we're facing this grim prospect, I'm wondering if you included pandemics in your disaster planning? I'm guessing that's a "no." And that seems pretty reasonable. After all, unless you are of a serious survivalist mentality, you probably haven't included provisions for other catastrophes either, such as the Earth being struck by a comet, atomic warfare wiping out humanity and bringing on a nuclear winter, or having your data center attacked by hordes of flesh-eating zombies lusting after the succulent flesh of Twinkies-fed support staff.

What's become apparent to me during the nascent pandemic is that hard, raw data on what is happening is really hard to find. Sure, there's lots of information, data that's been chewed over and spat out as news, but the raw stuff, the stuff you can find and manipulate because it has context and is structured and is therefore useful, is incredibly rare.

I wanted to set up a system to track the appearance of individual cases of swine flu to test some software I was playi-, er, evaluating, but all I could find was inconsistently formatted content — in other words, stuff that I'd have to apply my brain power to and expend time to transform into a usable format. The sad thing is it would be so easy to make this data machine understandable but the various governmental agencies involved just don't see the value yet.

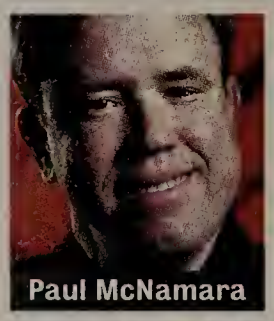
This is part of what the Semantic Web is supposed to solve, but that really addresses the technical end of what starts as a human problem — getting people to think about how to share data as opposed to how to consume information.

There's a conceptual problem in our society — we talk about being an "information society", but that actually means that a small number of sources are acquiring raw data, filtering and massaging that into what they think is information, and then most of us consume that output. The result is that we, the consumers, can only draw a limited range of conclusions … the truth is out there, it's just not available.

But what if we started to think of ourselves as the data society? Rather than being consumers of information selected and manipulated by others, we would all be consumers of raw data as well as producers of information. We have the personal productivity tools to do just that, but much of the data out there, particularly governmental raw data, is hidden away.

So, while we're hunkering down and trying to stay healthy, let's start thinking about what it would be like if we had access to all the data out there instead of just the information we're given.

Gibbs can be reached at backspin@gibbs.com.



Paul McNamara

NETBUZZ

News, Insights, oddities

Voyeurism stretches to new heights

Arrive at the Gigapixel Photography Web site (www.nwdocfinder.com/9828) and you'll see a gorgeous photo of a dozen condominium towers stretched across the Vancouver skyline, yachts docked in the foreground, dusk bathing the scene in a rich blue hue.

After admiring the shot for a moment, play around with the buttons in the upper left corner: zoom in, zoom out; pan right, pan left.… Now really zoom in hard and give the page a few seconds to reload. Holy gigapixels, you're right in somebody's living room … or bedroom. (Fear not, it's all safe for work, near as I can tell.)

The Vancouver company explains the technology this way on its site: "A gigapixel image is a digital image composed of more than 1 billion pixels. It contains more than 150 times the detail captured by a typical 6-megapixel consumer camera.

"Gigapixel images are created by tiling a large number of photographs, or scanning a large film negative (8" x 10"). Gigapixel images are displayed online using streaming technology that breaks the image into small tiles and loads them as you look. This allows you to instantly view high-resolution images that are over several gigabytes in size.

"Gigapixel photographs are ideal for tourism, real-estate, architecture, medical imaging, archiving and documenting special events. High-resolution images create the impression of 'being there' by immersing the viewer within the scene."

Not a word about voyeurism, but I'm guessing they spent many an hour scouring every lighted room on that photograph — there are hundreds — lest "being there" include capturing a Vancouverite (or two) in a compromising position. For example — hey, this is my job! — you might check out the room with the reddish light at the very top of the tallest tower on the right side of the photo; zoom in all the way and you'll see a couple apparently … dining.

Google Street View has already blazed this trail, of course, but Gigapixel is taking it to new heights — literally.

Satisfaction with government Web sites dips

Whether it's statistically meaningful or not will be left to the experts, but the perception certainly wasn't what "IT Team Obama" would want to see: Satisfaction with the Web sites of federal government programs took a dip in the first quarter, according to the American Customer Satisfaction Index, a longtime performance survey conducted by the University of Michigan and ForeSee Results.

We're talking about a half-point drop to 73.6 on a 100-point scale and the report authors speculated it could be related to high public expectations and/or issues related to the presidential transition. Personally, I'd give them another quarter or two before trying to draw any conclusions, but this clearly is an area in which the Obama camp must deliver on its campaign promises.

But here's the most interesting nugget I found in the press release about this study: "With two sites scoring 90, the Social Security Administration has higher scores than any private sector Web site measured by the ACSI."

This one I will take a crack at explaining: Older folks do vote in large numbers and Social Security is always a hot-button political issue. Making a visit to those Web sites seem like a day at the beach is akin to keeping the roads plowed.

Failure is not an option.

Something to say? The address is buzz@nww.com.

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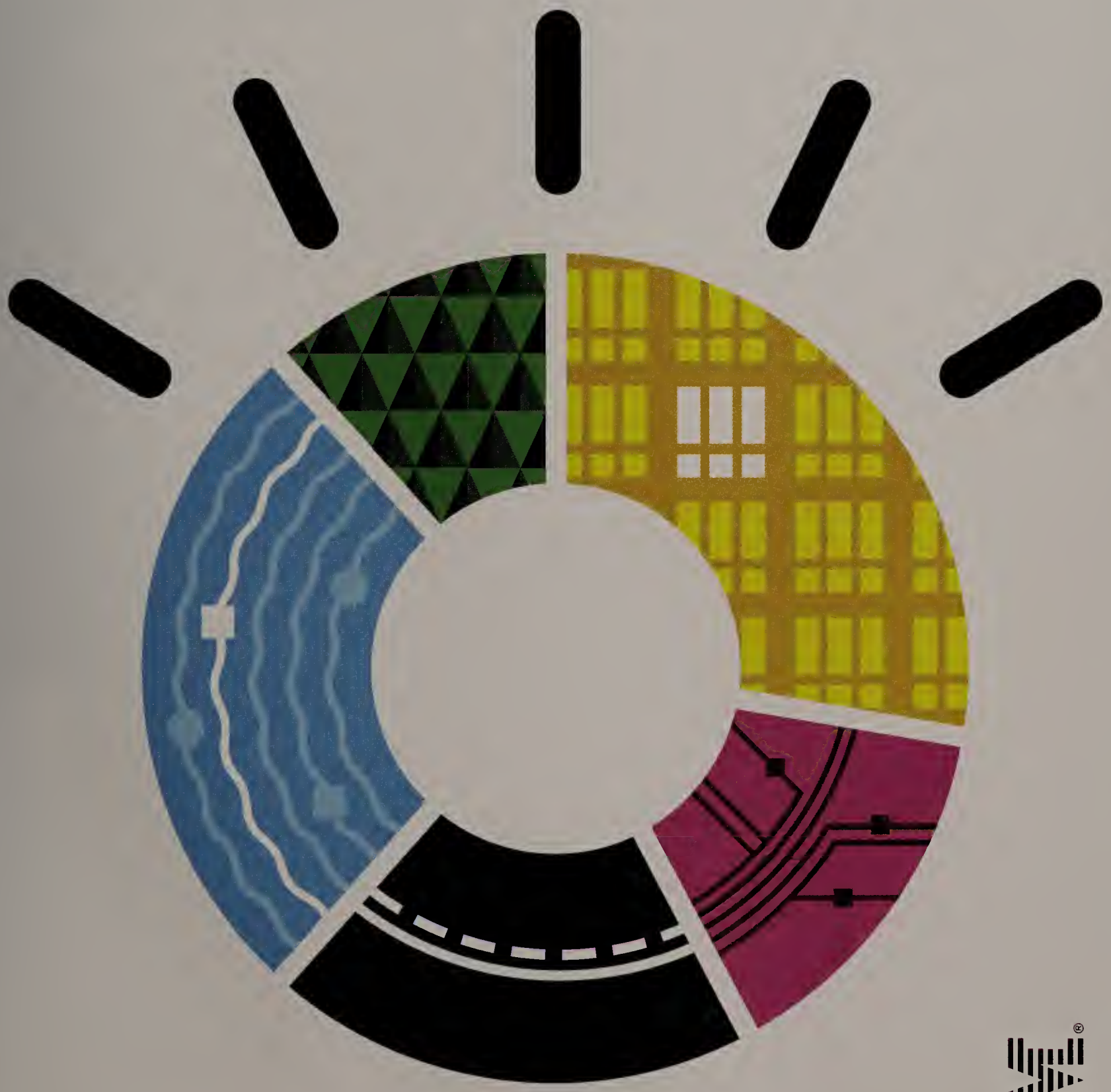

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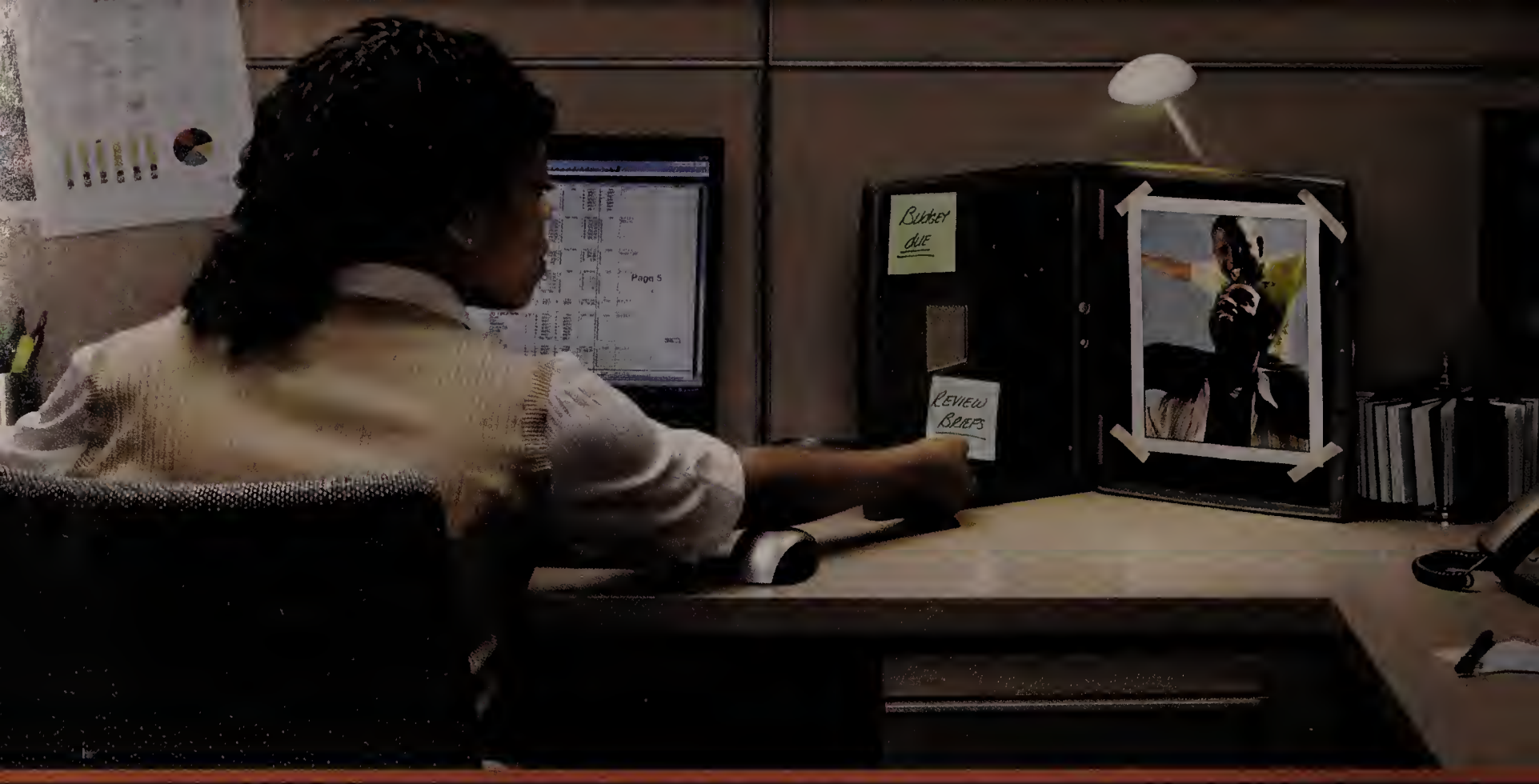

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